

81

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
3 October 2002 (03.10.2002)

PCT

(10) International Publication Number
WO 02/077183 A2

(51) International Patent Classification⁷: C12N
(21) International Application Number: PCT/US02/09107
(22) International Filing Date: 21 March 2002 (21.03.2002)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
09/815,242 21 March 2001 (21.03.2001) US
09/948,993 6 September 2001 (06.09.2001) US
60/342,923 25 October 2001 (25.10.2001) US
10/072,851 8 February 2002 (08.02.2002) US
60/362,699 6 March 2002 (06.03.2002) US

(US). ZAMUDIO, Carlos [US/US]; 8724 Villa La Jolla, #88, La Jolla, CA 92037 (US). MALONE, Cheryl [US/US]; 8798 Wahl Street, Santee, CA 92071 (US). HASELBECK, Robert [US/US]; 4672 El Cerrito Drive, San Diego, CA 92115 (US). OHLSEN, Kari, L. [US/US]; 3560 Vista De La Orilla, San Diego, CA 92117 (US). ZYSKIND, Judith, W. [US/US]; 8415 La Jolla Scenic Drive, La Jolla, CA 92037 (US). WALL, Daniel [US/US]; 3734 Brookshire Street, San Diego, CA 92111 (US). TRAWICK, John, D. [US/US]; 7975 Michelle Drive, La Mesa, CA 91942 (US). CARR, Grant, J. [US/US]; 2210 Sonrisa Glen, Escondido, CA 92029 (US). YAMAMOTO, Robert [US/US]; 3725 Notre Dame Avenue, San Diego, CA 92122 (US). FORSYTH, R., Allyn [US/US]; 1135 Beryl Street, San Diego, CA 92109 (US). XU, H., Howard [US/US]; 14695 Penasquitos Drive, San Diego, CA 92129 (US).

(71) Applicant (for all designated States except US): ELITRA PHARMACEUTICALS, INC. [US/US]; 3510 Dunhill Street, Suite A, San Diego, CA 92121 (US).

(74) Agent: HUNT, Dale, C.; KNOBBE, MARTENS, OLSON & BEAR, LLP, 16th Floor, 620 Newport Center Drive, Newport Beach, CA 92660 (US).

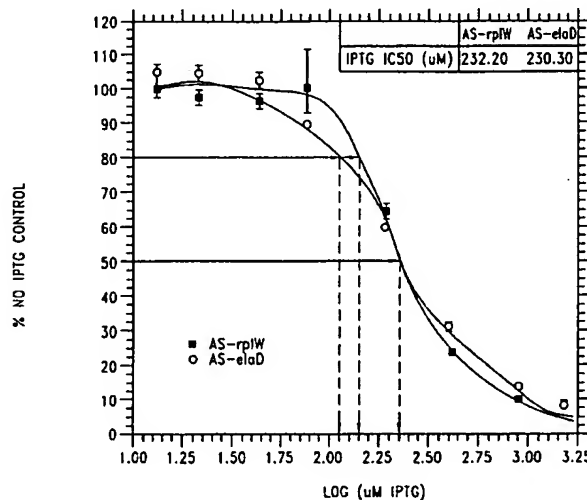
(72) Inventors; and

(75) Inventors/Applicants (for US only): WANG, Liangsu [CA/US]; 4204 Calle Isabelino, San Diego, CA 92130

(81) Designated States (national): AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA,

[Continued on next page]

(54) Title: IDENTIFICATION OF ESSENTIAL GENES IN MICROORGANISMS



(57) Abstract: The sequences of antisense nucleic acids which inhibit the proliferation of prokaryotes are disclosed. Cell based assays which employ the antisense nucleic acids to identify and develop antibiotics are also disclosed. The antisense nucleic acids can also be used to identify proteins required for proliferation, express these proteins or portions thereof, obtain antibodies capable of specifically binding to the expressed proteins, and to use those expressed proteins as a screen to isolate candidate molecules for rational drug discovery programs. The nucleic acids can also be used to screen for homologous nucleic acids that are required for proliferation in cells other than Staphylococcus aureus, Salmonella typhimurium, Klebsiella pneumoniae, and Pseudomonas aeruginosa. The nucleic acids of the present invention can also be used in various assay systems to screen for proliferation required genes in other organisms.

WO 02/077183 A2



CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EC, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) **Designated States (regional):** ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent

(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- without international search report and to be republished upon receipt of that report
- with sequence listing part of description published separately in electronic form and available upon request from the International Bureau

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

IDENTIFICATION OF ESSENTIAL GENES IN MICROORGANISMSSequence Listing

The present application is being filed along with quadruplicate copies of a CD-ROM marked "Copy 1 - SEQUENCE LISTING PART," "Copy 2 - SEQUENCE LISTING PART,"
5 "Copy 3 - SEQUENCE LISTING PART," and "CRF" containing a Sequence Listing in electronic format. The quadruplicate copies of the CD-ROM each contain a file entitled 034VPC_final.ST25.txt, created on March 15, 2002, which is 181,323,311 bytes in size.

Background of the Invention

Since the discovery of penicillin, the use of antibiotics to treat the ravages of bacterial
10 infections has saved millions of lives. With the advent of these "miracle drugs," for a time it was popularly believed that humanity might, once and for all, be saved from the scourge of bacterial infections. In fact, during the 1980s and early 1990s, many large pharmaceutical companies cut back or eliminated antibiotics research and development. They believed that infectious disease caused by bacteria finally had been conquered and that markets for new drugs were limited.
15 Unfortunately, this belief was overly optimistic.

The tide is beginning to turn in favor of the bacteria as reports of drug resistant bacteria become more frequent. The United States Centers for Disease Control announced that one of the most powerful known antibiotics, vancomycin, was unable to treat an infection of the common
20 *Staphylococcus aureus* (staph). This organism is commonly found in our environment and is responsible for many nosocomial infections. The import of this announcement becomes clear when one considers that vancomycin was used for years to treat infections caused by *Staphylococcus* species as well as other stubborn strains of bacteria. In short, bacteria are becoming resistant to our most powerful antibiotics. If this trend continues, it is conceivable that we will return to a time when what are presently considered minor bacterial infections are fatal diseases.

25 Over-prescription and improper prescription habits by some physicians have caused an indiscriminate increase in the availability of antibiotics to the public. The patients are also partly responsible, since they will often improperly use the drug, thereby generating yet another population of bacteria that is resistant, in whole or in part, to traditional antibiotics.

The bacterial pathogens that have haunted humanity remain, in spite of the development of
30 modern scientific practices to deal with the diseases that they cause. Drug resistant bacteria are now an increasing threat to the health of humanity. A new generation of antibiotics is needed to once again deal with the pending health threat that bacteria present.

Discovery of New Antibiotics

As more and more bacterial strains become resistant to the panel of available antibiotics,
35 new antibiotics are required to treat infections. In the past, practitioners of pharmacology would have to rely upon traditional methods of drug discovery to generate novel, safe and efficacious compounds for the treatment of disease. Traditional drug discovery methods involve blindly testing potential drug candidate-molecules, often selected at random, in the hope that one might prove to be

an effective treatment for some disease. The process is painstaking and laborious, with no guarantee of success. Today, the average cost to discover and develop a new drug exceeds US \$500 million, and the average time from laboratory to patient is 15 years. Improving this process, even incrementally, would represent a huge advance in the generation of novel antimicrobial agents.

5 Newly emerging practices in drug discovery utilize a number of biochemical techniques to provide for directed approaches to creating new drugs, rather than discovering them at random. For example, gene sequences and proteins encoded thereby that are required for the proliferation of a cell or microorganism make excellent targets since exposure of bacteria to compounds active against these targets would result in the inactivation of the cell or microorganism. Once a target is
10 identified, biochemical analysis of that target can be used to discover or to design molecules that interact with and alter the functions of the target. Use of physical and computational techniques to analyze structural and biochemical properties of targets in order to derive compounds that interact with such targets is called rational drug design and offers great potential. Thus, emerging drug discovery practices use molecular modeling techniques, combinatorial chemistry approaches, and
15 other means to produce and screen and/or design large numbers of candidate compounds.

Nevertheless, while this approach to drug discovery is clearly the way of the future, problems remain. For example, the initial step of identifying molecular targets for investigation can be an extremely time consuming task. It may also be difficult to design molecules that interact with the target by using computer modeling techniques. Furthermore, in cases where the function of the
20 target is not known or is poorly understood, it may be difficult to design assays to detect molecules that interact with and alter the functions of the target. To improve the rate of novel drug discovery and development, methods of identifying important molecular targets in pathogenic cells or microorganisms and methods for identifying molecules that interact with and alter the functions of such molecular targets are urgently required.

25 *Escherichia coli* represents an excellent model system to understand bacterial biochemistry and physiology. The estimated 4288 genes scattered along the 4.6×10^6 base pairs of the *Escherichia coli* (*E. coli*) chromosome offer tremendous promise for the understanding of bacterial biochemical processes. In turn, this knowledge will assist in the development of new tools for the diagnosis and treatment of bacteria-caused human disease. The entire *E. coli* genome has been
30 sequenced, and this body of information holds a tremendous potential for application to the discovery and development of new antibiotic compounds. Yet, in spite of this accomplishment, the general functions or roles of many of these genes are still unknown. For example, the total number of proliferation-required genes contained within the *E. coli* genome is unknown, but has been variously estimated at around 200 to 700 (Armstrong, K.A. and Fan, D.P. Essential Genes in the
35 *metB-malB* Region of *Escherichia coli* K12, 1975, J. Bacteriol. 126: 48-55).

Staphylococcus aureus is a Gram positive microorganism which is the causative agent of many infectious diseases. Local infection by *Staphylococcus aureus* can cause abscesses on skin and cellulitis in subcutaneous tissues and can lead to toxin-related diseases such as toxic shock and

scalded skin synd~~romes~~. *Staphylococcus aureus* can cause serious systemic infections such as osteomyelitis, endoc~~arditis~~, pneumonia, and septicemia. *Staphylococcus aureus* is also a common cause of food poi~~soning~~, often arising from contact between prepared food and infected food industry workers. Antibiotic resistant strains of *Staphylococcus aureus* have recently been
5 identified, including those that are now resistant to all available antibiotics, thereby severely limiting the options~~of~~ care available to physicians.

Pseudomon~~as~~ aeruginosa is an important Gram negative opportunistic pathogen. It is the most common Gram~~+~~ negative found in nosocomial infections. *P. aeruginosa* is responsible for 16% of nosocomial pneu~~monia~~ cases, 12% of hospital-acquired urinary tract infections, 8% of surgical
10 wound infections, and 10% of bloodstream infections. Immunocompromised patients, such as neutropenic cancer and bone marrow transplant patients, are particular susceptible to opportunistic infections. In this group of patients, *P. aeruginosa* is responsible for pneumonia and septicemia with attributable de~~aths~~ reaching 30%. *P. aeruginosa* is also one of the most common and lethal pathogens respons~~ible~~ for ventilator-associated pneumonia in intubated patients, with directly
15 attributable death rates reaching 38%. Although *P. aeruginosa* outbreaks in burn patients are rare, it is associated with 60% death rates. In the AIDS population, *P. aeruginosa* is associated with 50% of deaths. Cystic fibrosis patients are characteristically susceptible to chronic infection by *P. aeruginosa*, which is responsible for high rates of illness and death. Current antibiotics work poorly for CF infections (Van Delden & Igelwski. 1998. Emerging Infectious Diseases 4:551-560;
20 references therein).

The gram~~+~~ negative enteric bacterial genus, *Salmonella*, encompasses at least 2 species. One of these, *S. enterica*, is divided into multiple subspecies and thousands of serotypes or serovars (Brenner, et al. 2000 J. Clin. Microbiol. 38:2465-2467). The *S. enterica* human pathogens include serovars Typhi, Paratyphi, Typhimurium, Cholerasuis, and many others deemed so closely related
25 that they are variants of a widespread species. Worldwide, disease in humans caused by *Salmonella* is a very serious problem. In many developing countries, *S. enterica* ser. Typhi still causes often-fatal typhoid fever. This problem has been reduced or eliminated in wealthy industrial states. However, enteritis induced by *Salmonella* is widespread and is the second most common disease caused by contaminated food in the United States (Edwards, BH 1999 "Salmonella and Shigella
30 species" Clin. Lab Med. 19(3):469-487). Though usually self-limiting in healthy individuals, others such as children, seniors, and those with compromising illnesses can be at much greater risk of serious illness and death.

Some *S. enterica* serovars (e.g. Typhimurium) cause a localized infection in the gastrointestinal tract. Other serovars (i.e. Typhi and Paratyphi) cause a much more serious systemic
35 infection. In animal models, these roles can be reversed which has allowed the use of the relatively safe *S. enterica* ser. Typhimurium as a surrogate in mice for the typhoid fever agent, *S. enterica* ser. Typhi. In mice, *S. enterica* ser Typhimurium causes a systemic infection similar in outcome to typhoid fever. Years of study of the *Salmonella* have led to the identification of many determinants

of virulence in animals and humans. *Salmonella* is interesting in its ability to localize to and invade the intestinal epithelium, induce morphologic changes in target cells via injection of certain cell-remodeling proteins, and to reside intracellularly in membrane-bound vesicles (Wallis, TS and Galyov, EE 2000 "Molecular basis of *Salmonella*-induced enteritis." Molec. Microb. 36:997-1005; Falkow, S "The evolution of pathogenicity in *Escherichia*, *Shigella*, and *Salmonella*," Chap. 149 in Neidhardt, et al. eds pp 2723-2729; Gulig, PA "Pathogenesis of Systemic Disease," Chap. 152 in Neidhardt, et al. ppp 2774-2787). The immediate infection often results in a severe watery diarrhea but *Salmonella* also can establish and maintain a subclinical carrier state in some individuals. Spread is via food contaminated with sewage.

10 The gene products implicated in *Salmonella* pathogenesis include type three secretion systems (TTSS), proteins affecting cytoplasmic structure of the target cells, many proteins carrying out functions necessary for survival and proliferation of *Salmonella* in the host, as well as "traditional" factors such as endotoxin and secreted exotoxins. Additionally, there must be factors mediating species-specific illnesses. Despite this most of the genomes of *S. enterica* ser. Typhi (see
15 http://www.sanger.ac.uk/Projects/S_typhi/ for the genome database) and *S. enterica* ser. Typhimurium (see <http://genome.wustl.edu/gsc/bacterial/salmonella.shtml> for the genome database) are highly conserved and are mutually useful for gene identification in multiple serovars. The *Salmonella* are a complex group of enteric bacteria causing disease similar to but distinct from other gram negative enterics such as *E. coli* and have been a focus of biomedical research for the
20 last century.

Enterococcus faecalis, a Gram positive bacterium, is by far the most common member of the enterococci to cause infections in humans. *Enterococcus faecium* generally accounts for less than 20% of clinical isolates. Enterococci infections are mostly hospital-acquired though they are also associated with some community-acquired infections. Of nosocomial infections enterococci
25 account for 12% of bacteremia, 15% of surgical wound infections, 14% of urinary tract infections, and 5 to 15% of endocarditis cases (Huycke, M. M., D. F., Sahm and M. S. Gilmore. 1998. Emerging Infectious Diseases 4:239-249). Additionally enterococci are frequently associated with intraabdominal and pelvic infections. Enterococci infections are often hard to treat because they are resistant to a vast array of antimicrobial drugs, including aminoglycosides, penicillin, ampicillin
30 and vancomycin. The development of multiple-drug resistant (MDR) enterococci has made this bacteria a major concern for treating nosocomial infections.

 Current drug discovery methods involve screening large number of prospective therapeutic compounds to identify those that are effective therapeutic agents or that can be optimized to provide an effective therapeutic agents. For example, the compounds to be evaluated for therapeutic
35 activity may be members of a library of compounds generated by combinatorial chemistry or members of a library of natural products.

 Unfortunately, current methods are laborious and time consuming and may yield compounds which have already been identified or which act on gene products which are already

targeted by an existing therapeutic agent. In addition, a large number of compounds have been identified which have antimicrobial activity but which cannot be administered to individuals suffering from infection due to the fact that their targets are unknown.

The above reasons underscore the urgency of developing new antibiotics that are effective against *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Salmonella typhimurium*. Accordingly, there is an urgent need for more novel methods to identify and characterize bacterial genomic sequences that encode gene products involved in proliferation, and are thereby potential new targets for antibiotic development. Likewise, there is a need for rapid screening techniques which yield novel compounds or compounds which act on novel targets as well as a need for methods which permit the identification of the target on which a compound with antimicrobial activity acts.

Prior to the present invention, the discovery of *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Salmonella typhimurium* genes required for proliferation of the microorganism was a painstaking and slow process. Rapid screening techniques for identifying novel targets on which novel compounds act were undeveloped. While the detection and identification of new cellular drug targets within a *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Salmonella typhimurium* cell is key for novel antibiotic development and effective treatment, the current methods of drug target discovery available prior to this invention have required painstaking processes requiring years of effort.

Summary of the Invention

Some aspects of the present invention are described in the numbered paragraphs below.

1. A purified or isolated nucleic acid sequence comprising a nucleotide sequence consisting essentially of one of SEQ ID NOs: 1-6213, wherein expression of said nucleic acid inhibits proliferation of a cell.
2. The nucleic acid sequence of Paragraph 1, wherein said nucleotide sequence is complementary to at least a portion of a coding sequence of a gene whose expression is required for proliferation of a cell.
3. The nucleic acid of Paragraph 1, wherein said nucleic acid sequence is complementary to at least a portion of a nucleotide sequence of an RNA required for proliferation of a cell.
4. The nucleic acid of Paragraph 3, wherein said RNA is an RNA comprising a sequence of nucleotides encoding more than one gene product.
5. A purified or isolated nucleic acid comprising a fragment of one of SEQ ID NOs.: 1-6213, said fragment selected from the group consisting of fragments comprising at least 10, at least 20, at least 25, at least 30, at least 50 and more than 50 consecutive nucleotides of one of SEQ ID NOs: 1-6213.

6. The fragment of Paragraph 5, wherein said fragment is included in a nucleic acid obtained from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

7. The fragment of Paragraph 5, wherein said fragment is included in a nucleic acid obtained from an organism other than *Escherichia coli*.

8. A vector comprising a promoter operably linked to the nucleic acid of any one of Paragraphs 1-7.

9. The vector of Paragraph 8, wherein said promoter is active in a microorganism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,

Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*,
 5 *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,
 10 *Yersinia pestis* and any species falling within the genera of any of the above species.

10. A host cell containing the vector of Paragraph 8 or Paragraph 9.

11. A purified or isolated antisense nucleic acid comprising a nucleotide sequence complementary to at least a portion of an intragenic sequence, intergenic sequence, sequences spanning at least a portion of two or more genes, 5' noncoding region, or 3' noncoding region
 15 within an operon comprising a proliferation-required gene whose activity or expression is inhibited by an antisense nucleic acid comprising the nucleotide sequence of one of SEQ ID NOs.: 1-6213.

12. The purified or isolated antisense nucleic acid of Paragraph 11, wherein said antisense nucleic acid is complementary to a nucleic acid from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*,
 20 *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*,
 25 *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
 30 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 35 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma*

urealyticum, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

13. The purified or isolated antisense nucleic acid of Paragraph 11, wherein said nucleotide sequence is complementary to a nucleotide sequence of a nucleic acid from an organism other than *E. coli*.

14. The purified or isolated antisense nucleic acid of Paragraph 11, wherein said proliferation-required gene comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.

15. A purified or isolated nucleic acid comprising a nucleotide sequence having at least 70% identity to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, fragments comprising at least 25 consecutive nucleotides of SEQ ID NOS.: 1-6213, the nucleotide sequences complementary to SEQ ID NOS.: 1-6213 and the sequences complementary to fragments comprising at least 25 consecutive nucleotides of SEQ ID NOS.: 1-6213 as determined using BLASTN version 2.0 with the default parameters.

16. The purified or isolated nucleic acid of Paragraph 15, wherein said nucleic acid is obtained from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

17. The nucleic acid of Paragraph 15, wherein said nucleic acid is obtained from an organism other than *E. coli*.

18. A vector comprising a promoter operably linked to a nucleic acid encoding a polypeptide whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence of any one of SEQ ID NOs.: 1-6213.

19. The vector of Paragraph 18, wherein said nucleic acid encoding said polypeptide is
 5 obtained from an organism selected from the group consisting of *Acinetobacter baumannii*,
Anaplasma marginale, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella*
pertussis, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia*
mallei, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis*
glabrata), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*,
 10 *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia*
pneumoniae, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*,
Clostridium difficile, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*,
Cryptococcus neoformans, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*,
Escherichia coli, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella*
 15 *pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*,
Mycobacterium avium, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*,
Mycoplasma genitalium, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*,
Nocardia asteroides, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*,
Proteus mirabilis, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas*
 20 *syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*,
Salmonella typhi, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*,
Shigella sonnei, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*,
Streptococcus pneumoniae, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*,
Ureaplasma urealyticum, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia*
 25 *enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

20. The vector of Paragraph 18, wherein said nucleotide sequence encoding said polypeptide is obtained from an organism other than *E. coli*.

21. A host cell containing the vector of Paragraph 18.

22. The vector of Paragraph 18, wherein said polypeptide comprises a polypeptide
 30 comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 42398-
 78581.

23. The vector of Paragraph 18, wherein said promoter is operably linked to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.

24. A purified or isolated polypeptide comprising a polypeptide whose expression is
 35 inhibited by an antisense nucleic acid comprising a nucleotide sequence of any one of SEQ ID
 NOs.: 1-6213, or a fragment selected from the group consisting of fragments comprising at least 5,

at least 10, at least 20, at least 30, at least 40, at least 50, at least 60 or more than 60 consecutive amino acids of one of the said polypeptides.

25. The polypeptide of Paragraph 24, wherein said polypeptide comprises an amino acid sequence of any one of SEQ ID NOs.: 42398-78581 or a fragment comprising at least 5, at least 10, at least 20, at least 30, at least 40, at least 50, at least 60 or more than 60 consecutive amino acids of a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

26. The polypeptide of Paragraph 24, wherein said polypeptide is obtained from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

27. The polypeptide of Paragraph 24, wherein said polypeptide is obtained from an organism other than *E. coli*.

28. A purified or isolated polypeptide comprising a polypeptide having at least 25% amino acid identity to a polypeptide whose expression is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, or at least 25% amino acid identity to a fragment comprising at least 10, at least 20, at least 30, at least 40, at least 50, at least 60 or more than 60 consecutive amino acids of a polypeptide whose expression is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 as determined using FASTA version 3.0t78 with the default parameters.

29. The polypeptide of Paragraph 28, wherein said polypeptide has at least 25% identity to a polypeptide comprising one of SEQ ID NOs: 42398-78581 or at least 25% identity to a fragment comprising at least 5, at least 10, at least 20, at least 30, at least 40, at least 50, at least 60 or more than 60 consecutive amino acids of a polypeptide comprising one of SEQ ID NOs.: 42398-78581 as determined using FASTA version 3.0t78 with the default parameters.

30. The polypeptide of Paragraph 28, wherein said polypeptide is obtained from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

31. The polypeptide of Paragraph 28, wherein said polypeptide is obtained from an organism other than *E. coli*.

32. An antibody capable of specifically binding the polypeptide of one of Paragraphs 28-31.

33. A method of producing a polypeptide, comprising introducing a vector comprising a promoter operably linked to a nucleic acid comprising a nucleotide sequence encoding a polypeptide whose expression is inhibited by an antisense nucleic acid comprising one of SEQ ID NOs.: 1-6213 into a cell.

34. The method of Paragraph 33, further comprising the step of isolating said polypeptide.

35. The method of Paragraph 33, wherein said polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

36. The method of Paragraph 33, wherein said nucleic acid encoding said polypeptide is obtained from an organism selected from the group consisting of *Acinetobacter baumannii*,
 5 *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*,
 10 *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*,
 15 *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*,
 20 *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

25 37. The method of Paragraph 33, wherein said nucleic acid encoding said polypeptide is obtained from an organism other than *E. coli*.

38. The method of Paragraph 33, wherein said promoter is operably linked to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.

30 39. A method of inhibiting proliferation of a cell in an individual comprising inhibiting the activity or reducing the amount of a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 or inhibiting the activity or reducing the amount of a nucleic acid encoding said gene product.

35 40. The method of Paragraph 39, wherein said method comprises inhibiting said activity or reducing said amount of a gene product in an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*,

Burkholderia fungorum, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*,
 5 *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
 10 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*,
 15 *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

20 41. The method of Paragraph 39, wherein said method comprises inhibiting said activity or reducing said amount of a gene product in an organism other than *E. coli*.

42. The method of Paragraph 39, wherein said gene product is present in an organism other than *E. coli*.

25 43. The method of Paragraph 39, wherein said gene product comprises a polypeptide comprising a sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

44. A method for identifying a compound which influences the activity of a gene product required for proliferation, said gene product comprising a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, said method comprising:

30 contacting said gene product with a candidate compound; and
 determining whether said compound influences the activity of said gene product.

45. The method of Paragraph 44, wherein said gene product is from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*,
 35 *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*,

- Clostridium acetobutylicum, Clostridium botulinum, Clostridium difficile, Clostridium perfringens, Coccidioides immitis, Corynebacterium diphtheriae, Cryptococcus neoformans, Enterobacter cloacae, Enterococcus faecalis, Enterococcus faecium, Escherichia coli, Haemophilus influenzae, Helicobacter pylori, Histoplasma capsulatum, Klebsiella pneumoniae, Legionella pneumophila,*
- 5 *Listeria monocytogenes, Moraxella catarrhalis, Mycobacterium avium, Mycobacterium bovis, Mycobacterium leprae, Mycobacterium tuberculosis, Mycoplasma genitalium, Mycoplasma pneumoniae, Neisseria gonorrhoeae, Neisseria meningitidis, Nocardia asteroides, Pasteurella haemolytica, Pasteurella multocida, Pneumocystis carinii, Proteus mirabilis, Proteus vulgaris, Pseudomonas aeruginosa, Pseudomonas putida, Pseudomonas syringae, Salmonella bongori,*
- 10 *Salmonella choleraesuis, Salmonella enterica, Salmonella paratyphi, Salmonella typhi, Salmonella typhimurium, Shigella boydii, Shigella dysenteriae, Shigella flexneri, Shigella sonnei, Staphylococcus aureus, Staphylococcus epidermidis, Staphylococcus haemolyticus, Streptococcus pneumoniae, Streptococcus mutans, Streptococcus pyogenes, Treponema pallidum, Ureaplasma urealyticum, Vibrio cholerae, Vibrio parahaemolyticus, Vibrio vulnificans, Yersinia enterocolitica,*
- 15 *Yersinia pestis* and any species falling within the genera of any of the above species.
46. The method of Paragraph 44, wherein said gene product is from an organism other than *E. coli*.
47. The method of Paragraph 44, wherein said gene product is a polypeptide and said activity is an enzymatic activity.
- 20 48. The method of Paragraph 44, wherein said gene product is a polypeptide and said activity is a carbon compound catabolism activity.
49. The method of Paragraph 44, wherein said gene product is a polypeptide and said activity is a biosynthetic activity.
50. The method of Paragraph 44, wherein said gene product is a polypeptide and said activity is a transporter activity.
- 25 51. The method of Paragraph 44, wherein said gene product is a polypeptide and said activity is a transcriptional activity.
52. The method of Paragraph 44, wherein said gene product is a polypeptide and said activity is a DNA replication activity.
- 30 53. The method of Paragraph 44, wherein said gene product is a polypeptide and said activity is a cell division activity.
54. The method of Paragraph 44, wherein said gene product is an RNA.
55. The method of Paragraph 44, wherein said gene product is a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-35 78581.
56. A compound identified using the method of Paragraph 44.
57. A method for identifying a compound or nucleic acid having the ability to reduce the activity or level of a gene product required for proliferation, said gene product comprising a

gene product whose activity or expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, said method comprising:

- (a) contacting a target gene or RNA encoding said gene product with a candidate compound or nucleic acid; and
- (b) measuring an activity of said target.

58. The method of Paragraph 57, wherein said target gene or RNA is from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

59. The method of Paragraph 57, wherein said target gene or RNA is from an organism other than *E. coli*.

60. The method of Paragraph 57, wherein said gene product is from an organism other than *E. coli*.

61. The method of Paragraph 57, wherein said target is a messenger RNA molecule and said activity is translation of said messenger RNA.

62. The method of Paragraph 57, wherein said target is a messenger RNA molecule and said activity is transcription of a gene encoding said messenger RNA.

63. The method of Paragraph 57, wherein said target is a gene and said activity is transcription of said gene.

64. The method of Paragraph 57, wherein said target is a nontranslated RNA and said activity is processing or folding of said nontranslated RNA or assembly of said nontranslated RNA into a protein/RNA complex.
65. The method of Paragraph 57, wherein said target is a messenger RNA molecule encoding a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS.: 42398-78581.
66. The method of Paragraph 57, wherein said target comprises a nucleic acid selected from the group consisting of SEQ ID NOS.: 6214-42397.
67. A compound or nucleic acid identified using the method of Paragraph 57.
68. A method for identifying a compound which reduces the activity or level of a gene product required for proliferation of a cell, wherein the activity or expression of said gene product is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, said method comprising the steps of:
- (a) providing a sublethal level of an antisense nucleic acid comprising a nucleotide sequence complementary to a nucleic acid comprising a nucleotide sequence encoding said gene product in a cell to reduce the activity or amount of said gene product in said cell, thereby producing a sensitized cell;
 - (b) contacting said sensitized cell with a compound; and
 - (c) determining the degree to which said compound inhibits proliferation of said sensitized cell relative to a cell which does not contain said antisense nucleic acid.
69. The method of Paragraph 68, wherein said determining step comprises determining whether said compound inhibits the growth of said sensitized cell to a greater extent than said compound inhibits the growth of a nonsensitized cell.
70. The method of Paragraph 68, wherein said cell is a Gram positive bacterium.
71. The method of Paragraph 68, wherein said Gram positive bacterium is selected from the group consisting of *Staphylococcus* species, *Streptococcus* species, *Enterococcus* species, *Mycobacterium* species, *Clostridium* species, and *Bacillus* species.
72. The method of Paragraph 68, wherein said bacterium is *Staphylococcus aureus*.
73. The method of Paragraph 72, wherein said *Staphylococcus* species is coagulase negative.
74. The method of Paragraph 72, wherein said bacterium is selected from the group consisting of *Staphylococcus aureus* RN450 and *Staphylococcus aureus* RN4220.
75. The method of Paragraph 68, wherein said cell is an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*),

Candida dubliniensis, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*,
5 *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
10 *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*,
15 *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

76. The method of Paragraph 68, wherein said cell is not an *E. coli* cell.

77. The method of Paragraph 68, wherein said gene product is from an organism other than *E. coli*.

20 78. The method of Paragraph 68, wherein said antisense nucleic acid is transcribed from an inducible promoter.

79. The method of Paragraph 68, further comprising the step of contacting said cell with a concentration of inducer which induces transcription of said antisense nucleic acid to a sublethal level.

25 80. The method of Paragraph 68, wherein growth inhibition is measured by monitoring optical density of a culture growth solution.

81. The method of Paragraph 68, wherein said gene product is a polypeptide.

82. The method of Paragraph 81, wherein said polypeptide comprises an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

30 83. The method of Paragraph 68, wherein said gene product is an RNA.

84. The method of Paragraph 68, wherein nucleic acid encoding said gene product comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.

85. A compound identified using the method of Paragraph 68.

35 86. A method for inhibiting cellular proliferation comprising introducing an effective amount of a compound with activity against a gene whose activity or expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 or a compound with activity against the product of said gene into a population of cells expressing said gene.

87. The method of Paragraph 86, wherein said compound is an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, or a proliferation-inhibiting portion thereof.

88. The method of Paragraph 86, wherein said proliferation inhibiting portion of one of
5 SEQ ID NOs.: 1-6213 is a fragment comprising at least 10, at least 20, at least 25, at least 30, at least 50 or more than 51 consecutive nucleotides of one of SEQ ID NOs.: 1-6213.

89. The method of Paragraph 86, wherein said population is a population of Gram positive bacteria.

90. The method of Paragraph 89, wherein said population of Gram positive bacteria is
10 selected from the group consisting of a population of *Staphylococcus* species, *Streptococcus* species, *Enterococcus* species, *Mycobacterium* species, *Clostridium* species, and *Bacillus* species.

91. The method of Paragraph 86, wherein said population is a population of *Staphylococcus aureus*.

92. The method of Paragraph 91, wherein said population is a population of a
15 bacterium selected from the group consisting of *Staphylococcus aureus* RN450 and *Staphylococcus aureus* RN4220.

93. The method of Paragraph 86, wherein said population is a population of a bacterium selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*,
25 *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*,
30 *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
35 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

94. The method of Paragraph 86, wherein said population is a population of an organism other than *E. coli*.

95. The method of Paragraph 86, wherein said product of said gene is from an organism other than *E. coli*.

5 96. The method of Paragraph 86, wherein said gene encodes a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

97. The method of Paragraph 86, wherein said gene comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.

98. A composition comprising an effective concentration of an antisense nucleic acid
10 comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, or a proliferation-inhibiting portion thereof in a pharmaceutically acceptable carrier.

99. The composition of Paragraph 98, wherein said proliferation-inhibiting portion of one of SEQ ID NOs.: 1-6213 comprises at least 20, at least 25, at least 30, at least 50 or more than 50 consecutive nucleotides of one of SEQ ID NOs.: 1-6213.

15 100. A method for inhibiting the activity or expression of a gene in an operon required for proliferation wherein the activity or expression of at least one gene in said operon is inhibited by an antisense nucleic acid comprising a sequence selected from the group consisting of SEQ ID NOs.: 1-6213, said method comprising contacting a cell in a cell population with an antisense nucleic acid complementary to at least a portion of said operon.

20 101. The method of Paragraph 100, wherein said antisense nucleic acid comprises a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 or a proliferation-inhibiting portion thereof.

102. The method of Paragraph 100, wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*,
25 *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
30 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*,

Salmonella choleraesuis, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

103. The method of Paragraph 100, wherein said cell is not an *E. coli* cell.
104. The method of Paragraph 100, wherein said gene is from an organism other than *E. coli*.
105. The method of Paragraph 100, wherein said cell is contacted with said antisense nucleic acid by introducing a plasmid which expresses said antisense nucleic acid into said cell population.
106. The method of Paragraph 100, wherein said cell is contacted with said antisense nucleic acid by introducing a phage which encodes said antisense nucleic acid into said cell population.
107. The method of Paragraph 100, wherein said cell is contacted with said antisense nucleic acid by expressing said antisense nucleic acid from the chromosome of cells in said cell population.
108. The method of Paragraph 100, wherein said cell is contacted with said antisense nucleic acid by introducing a promoter adjacent to a chromosomal copy of said antisense nucleic acid such that said promoter directs the transcription of said antisense nucleic acid.
109. The method of Paragraph 100, wherein said cell is contacted with said antisense nucleic acid by introducing a retron which expresses said antisense nucleic acid into said cell population.
110. The method of Paragraph 100, wherein said cell is contacted with said antisense nucleic acid by introducing a ribozyme into said cell-population, wherein a binding portion of said ribozyme comprises said antisense nucleic acid.
111. The method of Paragraph 100, wherein said cell is contacted with said antisense nucleic acid by introducing a liposome comprising said antisense nucleic acid into said cell.
112. The method of Paragraph 100, wherein said cell is contacted with said antisense nucleic acid by electroporation of said antisense nucleic acid into said cell.
113. The method of Paragraph 100, wherein said antisense nucleic acid is a fragment comprising at least 10, at least 20, at least 25, at least 30, at least 50 or more than 50 consecutive nucleotides of one of SEQ ID NOS.: 1-6213.
114. The method of Paragraph 100 wherein said antisense nucleic acid is a synthetic oligonucleotide.
115. The method of Paragraph 100, wherein said gene comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.

116. A method for identifying a gene which is required for proliferation of a cell comprising:

- (a) contacting a cell with an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, wherein said cell is a cell other than the organism from which said nucleic acid was obtained;
- (b) determining whether said nucleic acid inhibits proliferation of said cell; and
- (c) identifying the gene in said cell which encodes the mRNA which is complementary to said antisense nucleic acid or a portion thereof.

117. The method of Paragraph 116, wherein said cell is selected from the group consisting of *Staphylococcus* species, *Streptococcus* species, *Enterococcus* species, *Mycobacterium* species, *Clostridium* species, and *Bacillus* species.

118. The method of Paragraph 116 wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

119. The method of Paragraph 116, wherein said cell is not *E. coli*.

120. The method of Paragraph 116, further comprising operably linking said antisense nucleic acid to a promoter which is functional in said cell, said promoter being included in a vector, and introducing said vector into said cell.

121. A method for identifying a compound having the ability to inhibit proliferation of a cell comprising:

- (a) identifying a homolog of a gene or gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs. 1-6213 in a test cell, wherein said test cell is not the cell from which said nucleic acid was obtained;
- (b) identifying an inhibitory nucleic acid sequence which inhibits the activity of said homolog in said test cell;
- (c) contacting said test cell with a sublethal level of said inhibitory nucleic acid, thus sensitizing said cell;
- (d) contacting the sensitized cell of step (c) with a compound; and
- (e) determining the degree to which said compound inhibits proliferation of said sensitized cell relative to a cell which does not contain said inhibitory nucleic acid.

122. The method of Paragraph 121, wherein said determining step comprises determining whether said compound inhibits proliferation of said sensitized test cell to a greater extent than said compound inhibits proliferation of a nonsensitized test cell.

123. The method of Paragraph 121, wherein step (a) comprises identifying a nucleic acid homologous to a gene or gene product whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs. 1-6213 or a nucleic acid encoding a homologous polypeptide to a polypeptide whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs. 1-6213 by using an algorithm selected from the group consisting of BLASTN version 2.0 with the default parameters and FASTA version 3.0t78 algorithm with the default parameters to identify said homologous nucleic acid or said nucleic acid encoding a homologous polypeptide in a database.

124. The method of Paragraph 121 wherein said step (a) comprises identifying a homologous nucleic acid or a nucleic acid comprising a sequence of nucleotides encoding a homologous polypeptide by identifying nucleic acids which hybridize to said nucleic acid selected from the group consisting of SEQ ID NOs. 1-6213 or the complement of said nucleic acid selected from the group consisting of SEQ ID NOs. 1-6213.

125. The method of Paragraph 121 wherein step (a) comprises expressing a nucleic acid selected from the group consisting of SEQ ID NOs. 1-6213 in said test cell.

126. The method of Paragraph 121, wherein step (a) comprises identifying a homologous nucleic acid or a nucleic acid encoding a homologous polypeptide in a test cell selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida*

- pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*,
 5 *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
 10 *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,
 15 *Yersinia pestis* and any species falling within the genera of any of the above species.

127. The method of Paragraph 121, wherein step (a) comprises identifying a homologous nucleic acid or a nucleic acid encoding a homologous polypeptide in a test cell other than *E. coli*.

- 20 128. The method of Paragraph 121, wherein said inhibitory nucleic acid is an antisense nucleic acid.

129. The method of Paragraph 121, wherein said inhibitory nucleic acid comprises an antisense nucleic acid to a portion of said homolog.

130. The method of Paragraph 121, wherein said inhibitory nucleic acid comprises an antisense nucleic acid to a portion of the operon encoding said homolog.
 25

131. The method of Paragraph 121, wherein the step of contacting the cell with a sublethal level of said inhibitory nucleic acid comprises directly contacting the surface of said cell with said inhibitory nucleic acid.

132. The method of Paragraph 121, wherein the step of contacting the cell with a sublethal level of said inhibitory nucleic acid comprises transcribing an antisense nucleic acid complementary to at least a portion of the RNA transcribed from said homolog in said cell.
 30

133. The method of Paragraph 121, wherein said gene product comprises a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS.: 42398-78581.

134. The method of Paragraph 121, wherein said gene comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.
 35

135. A compound identified using the method of Paragraph 121.

136. A method of identifying a compound having the ability to inhibit proliferation comprising:

- (a) contacting a test cell with a sublethal level of a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs. 1-6213 or a portion thereof which inhibits the proliferation of the cell from which said nucleic acid was obtained, thus sensitizing said test cell;
- (b) contacting the sensitized test cell of step (a) with a compound; and
- (c) determining the degree to which said compound inhibits proliferation of said sensitized test cell relative to a cell which does not contain said nucleic acid.

137. The method of Paragraph 136, wherein said determining step comprises determining whether said compound inhibits proliferation of said sensitized test cell to a greater extent than said compound inhibits proliferation of a nonsensitized test cell.

138. A compound identified using the method of Paragraph 136.

139. The method of Paragraph 136, wherein said test cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

140. The method of Paragraph 136, wherein the test cell is not *E. coli*.

141. A method for identifying a compound having activity against a biological pathway required for proliferation comprising:

(a) sensitizing a cell by providing a sublethal level of an antisense nucleic acid complementary to a nucleic acid encoding a gene product required for proliferation, wherein the activity or expression of said gene product is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID
 5 NOs.: 1-6213, in said cell to reduce the activity or amount of said gene product;

(b) contacting the sensitized cell with a compound; and

(c) determining the degree to which said compound inhibits the growth of said sensitized cell relative to a cell which does not contain said antisense nucleic acid.

142. The method of Paragraph 141, wherein said determining step comprises
 10 determining whether said compound inhibits the growth of said sensitized cell to a greater extent than said compound inhibits the growth of a nonsensitized cell.

143. The method of Paragraph 141, wherein said cell is selected from the group consisting of bacterial cells, fungal cells, plant cells, and animal cells.

144. The method of Paragraph 141, wherein said cell is a Gram positive bacterium.

15 145. The method of Paragraph 144, wherein said Gram positive bacterium is selected from the group consisting of *Staphylococcus* species, *Streptococcus* species, *Enterococcus* species, *Mycobacterium* species, *Clostridium* species, and *Bacillus* species.

146. The method of Paragraph 145, wherein said Gram positive bacterium is *Staphylococcus aureus*.

20 147. The method of Paragraph 146, wherein said Gram positive bacterium is selected from the group consisting of *Staphylococcus aureus* RN450 and *Staphylococcus aureus* RN4220.

148. The method of Paragraph 141, wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*,
 25 *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*,
 30 *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella*

typhimurium, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,

5 *Yersinia pestis* and any species falling within the genera of any of the above species.

149. The method of Paragraph 141, wherein said cell is not an *E. coli* cell.

150. The method of Paragraph 141, wherein said gene product is from an organism other than *E. coli*.

151. The method of Paragraph 141, wherein said antisense nucleic acid is transcribed
10 from an inducible promoter.

152. The method of Paragraph 141, further comprising contacting the cell with an agent which induces transcription of said antisense nucleic acid from said inducible promoter, wherein said antisense nucleic acid is transcribed at a sublethal level.

153. The method of Paragraph 141, wherein inhibition of proliferation is measured by
15 monitoring the optical density of a liquid culture.

154. The method of Paragraph 141, wherein said gene product comprises a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS.: 42398-78581.

155. The method of Paragraph 141, wherein said nucleic acid encoding said gene
20 product comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.

156. A compound identified using the method of Paragraph 141.

157. A method for identifying a compound having the ability to inhibit cellular proliferation comprising:

25 (a) contacting a cell with an agent which reduces the activity or level of a gene product required for proliferation of said cell, wherein said gene product is a gene product whose activity or expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213;

(b) contacting said cell with a compound; and

30 (c) determining whether said compound reduces proliferation of said contacted cell by acting on said gene product.

158. The method of Paragraph 157, wherein said determining step comprises determining whether said compound reduces proliferation of said contacted cell to a greater extent than said compound reduces proliferation of cells which have not been contacted with said agent.

35 159. The method of Paragraph 157, wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida*

glabrata (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*,
 5 *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
 10 *pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 15 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

160. The method of Paragraph 157, wherein said cell is not an *E. coli* cell.

20 161. The method of Paragraph 157, wherein said gene product is from an organism other than *E. coli*.

162. The method of Paragraph 157, wherein said agent which reduces the activity or level of a gene product required for proliferation of said cell comprises an antisense nucleic acid to a gene or operon required for proliferation.

25 163. The method of Paragraph 157, wherein said agent which reduces the activity or level of a gene product required for proliferation of said cell comprises a compound known to inhibit growth or proliferation of a cell.

164. The method of Paragraph 157, wherein said cell contains a mutation which reduces the activity or level of said gene product required for proliferation of said cell.

30 165. The method of Paragraph 157, wherein said mutation is a temperature sensitive mutation.

166. The method of Paragraph 157, wherein said gene product comprises a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

35 167. A compound identified using the method of Paragraph 157.

168. A method for identifying the biological pathway in which a proliferation-required gene or its gene product lies, wherein said gene or gene product comprises a gene or gene product

whose activity or expression is inhibited by an antisense nucleic acid comprising a sequence selected from the group consisting of SEQ ID NOs.: 1-6213, said method comprising:

(a) providing a sublethal level of an antisense nucleic acid which inhibits the activity of said proliferation-required gene or gene product in a test cell;

5 (b) contacting said test cell with a compound known to inhibit growth or proliferation of a cell, wherein the biological pathway on which said compound acts is known; and

(c) determining the degree to which said proliferation of said test cell is inhibited relative to a cell which was not contacted with said compound.

10 169. The method of Paragraph 168, wherein said determining step comprises determining whether said test cell has a substantially greater sensitivity to said compound than a cell which does not express said sublethal level of said antisense nucleic acid.

170. The method of Paragraph 168, wherein said gene product comprises a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-
15 78581.

171. The method of Paragraph 168, wherein said test cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

172. The method of Paragraph 168, wherein said test cell is not an *E. coli* cell.

173. The method of Paragraph 168, wherein said gene product is from an organism other than *E. coli*.

174. A method for determining the biological pathway on which a test compound acts comprising:

5 (a) providing a sublethal level of an antisense nucleic acid complementary to a proliferation-required nucleic acid in a first cell, wherein the activity or expression of said proliferation-required nucleic acid is inhibited by an antisense nucleic acid comprising a sequence selected from the group consisting of SEQ ID NOs.: 1-6213 and wherein the biological pathway in which said proliferation-required nucleic acid or a protein encoded
10 by said proliferation-required nucleic acid lies is known,

(b) contacting said first cell with said test compound; and

(c) determining the degree to which said test compound inhibits proliferation of said first cell relative to a cell which does not contain said antisense nucleic acid.

175. The method of Paragraph 174, wherein said determining step comprises
15 determining whether said first cell has a substantially greater sensitivity to said test compound than a cell which does not express said sublethal level of said antisense nucleic acid.

176. The method of Paragraph 174, further comprising:

(d) providing a sublethal level of a second antisense nucleic acid complementary to
20 a second proliferation-required nucleic acid in a second cell, wherein said second proliferation-required nucleic acid is in a different biological pathway than said proliferation-required nucleic acid in step (a); and

(e) determining whether said second cell does not have a substantially greater
25 sensitivity to said test compound than a cell which does not express said sublethal level of said second antisense nucleic acid, wherein said test compound is specific for the biological pathway against which the antisense nucleic acid of step (a) acts if said first cell has a substantially greater sensitivity to said test compound than said second cell.

177. The method of Paragraph 174, wherein said first cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*,
30 *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*,
35 *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,

Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*,
 5 *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,
 10 *Yersinia pestis* and any species falling within the genera of any of the above species.

178. The method of Paragraph 174, wherein said first cell is not an *E. coli* cell.

179. The method of Paragraph 174, wherein said proliferation-required nucleic acid is from an organism other than *E. coli*.

180. A purified or isolated nucleic acid comprising a sequence selected from the group
 15 consisting of SEQ ID NOs.: 1-6213.

181. A compound which interacts with a gene or gene product whose activity or expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence of one of SEQ ID NOs.: 1-6213 to inhibit proliferation.

182. The compound of Paragraph 181, wherein said gene product is a polypeptide
 20 comprising one of SEQ ID NOs.: 42398-78581.

183. The compound of Paragraph 181, wherein said gene comprises a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397.

184. A compound which interacts with a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence of one of SEQ ID NOs.: 1-6213 to
 25 inhibit proliferation.

185. A method for manufacturing an antibiotic comprising the steps of:
 screening one or more candidate compounds to identify a compound that reduces the activity or level of a gene product required for proliferation, said gene product comprising a gene product whose activity or expression is inhibited by an antisense nucleic acid comprising a
 30 nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213; and
 manufacturing the compound so identified.

186. The method of Paragraph 185, wherein said screening step comprises performing any one of the methods of Paragraphs 44, 68, 121, 136, 141, and 157.

187. The method of Paragraph 185, wherein said gene product is a polypeptide
 35 comprising one of SEQ ID NOs.: 42398-78581.

188. A method for inhibiting proliferation of a cell in a subject comprising administering an effective amount of a compound that reduces the activity or level of a gene product required for proliferation of said cell, said gene product comprising a gene product whose activity or expression

is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 to said subject.

189. The method of Paragraph 188 wherein said subject is selected from the group consisting of vertebrates, mammals, avians, and human beings.

5 190. The method of Paragraph 188, wherein said gene product comprises a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

191. The method of Paragraph 188, wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*,
 10 *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
 15 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 20 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

30 192. The method of Paragraph 188, wherein said cell is not *E. coli*.

193. The method of Paragraph 188, wherein said gene product is from an organism other than *E. coli*.

194. A purified or isolated nucleic acid consisting essentially of the coding sequence of one of SEQ ID NOs: 6214-42397.

35 195. A fragment of the nucleic acid of Paragraph 8, said fragment comprising at least 10, at least 20, at least 25, at least 30, at least 50 or more than 50 consecutive nucleotides of one of SEQ ID NOs: 6214-42397.

196. A purified or isolated nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity to a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, fragments comprising at least 25 consecutive nucleotides of SEQ ID NOs.: 6214-42397, the nucleotide sequences complementary to SEQ ID NOs.: 6214-42397, and the
 5 nucleotide sequences complementary to fragments comprising at least 25 consecutive nucleotides of SEQ ID NOs.: 6214-42397 as determined using BLASTN version 2.0 with the default parameters.

197. The nucleic acid of Paragraph 196, wherein said nucleic acid is from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*,
 10 *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*,
 15 *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
 20 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 25 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

30 198. The nucleic acid of Paragraph 196, wherein said nucleic acid is from an organism other than *E. coli*.

199. A method of inhibiting proliferation of a cell comprising inhibiting the activity or reducing the amount of a gene product in said cell or inhibiting the activity or reducing the amount of a nucleic acid encoding said gene product in said cell, wherein said gene product is selected from
 35 the group consisting of a gene product having having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at

least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213.

200. The method of Paragraph 199, wherein said method comprises inhibiting said activity or reducing said amount of said gene product or inhibiting the activity or reducing the amount of a nucleic acid encoding said gene product in an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

201. The ~~method~~ of Paragraph 199, wherein said method comprises inhibiting said activity or reducing said amount of said gene product or inhibiting the activity or reducing the amount of a nucleic acid ~~encoding~~ said gene product in an organism other than *E. coli*.

202. The ~~method~~ of Paragraph 199, wherein said gene product is from an organism other than *E. coli*.

203. The ~~method~~ of Paragraph 199, wherein said gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42398-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS: 42398-78581.

204. The ~~method~~ of Paragraph 199, wherein said gene product is encoded by a nucleic acid selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

205. A method for identifying a compound which influences the activity of a gene product required for proliferation comprising:

contacting a candidate compound with a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented

by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs: 1-6213; and

determining whether said candidate compound influences the activity of said gene product.

- 5 206. The method of Paragraph 205, wherein said gene product is from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*,
10 *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
15 *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,
20 *Yersinia pestis* and any species falling within the genera of any of the above species.

207. The method of Paragraph 205, wherein said gene product is from an organism other than *E. coli*.

208. The method of Paragraph 205, wherein said gene product is a polypeptide selected
30 from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs.: 42398-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs: 42398-78581.

209. The method of Paragraph 205, wherein said gene product is encoded by a nucleic
35 acid selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid which hybridizes to a sequence selected from the group consisting of SEQ ID

NOS.: 6214-42397 under stringent conditions, and a nucleic acid which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

210. A compound identified using the method of Paragraph 205.

211. A method for identifying a compound or nucleic acid having the ability to reduce
5 the activity or level of a gene product required for proliferation comprising:

(a) providing a target that is a gene or RNA, wherein said target comprises a nucleic acid that encodes a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is
10 inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleic acid identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited
15 consisting of SEQ ID NOS.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the
20 group consisting of SEQ ID NOS.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID
25 NOS.: 1-6213;

(b) contacting said target with a candidate compound or nucleic acid; and

(c) measuring an activity of said target.

212. The method of Paragraph 211, wherein said target gene or RNA is from an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*,
30 *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torilopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*,
35 *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*,

Listeria monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
pneumoniae, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella*
haemolytica, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
5 *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*,
Salmonella choleraesuis, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella*
typhimurium, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
Staphylococcus aureus, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus*
pneumoniae, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma*
10 *urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,
Yersinia pestis and any species falling within the genera of any of the above species.

213. The method of Paragraph 211, wherein said target gene or RNA is from an organism other than *E. coli*.

214. The method of Paragraph 211, wherein said gene product is from an organism other
15 than *E. coli*.

215. The method of Paragraph 211, wherein said target is a messenger RNA molecule and said activity is translation of said messenger RNA.

216. The method of Paragraph 211, wherein said compound is a nucleic acid and said activity is translation of said gene product.

217. The method of Paragraph 211, wherein said target is a gene and said activity is transcription of said gene.
20

218. The method of Paragraph 211, wherein said target is a nontranslated RNA and said activity is processing or folding of said nontranslated RNA or assembly of said nontranslated RNA into a protein/RNA complex.

219. The method of Paragraph 211, wherein said target gene is a messenger RNA molecule encoding a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42398-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS.: 42398-78581.
25

220. The method of Paragraph 11, wherein said target gene comprises a nucleic acid selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.:
30 6214-42397 under stringent conditions, and a nucleic acid which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

221. A compound or nucleic acid identified using the method of Paragraph 211.

222. A method for identifying a compound which reduces the activity or level of a gene product required for proliferation of a cell comprising:

(a) providing a sublethal level of an antisense nucleic acid complementary to a nucleic acid encoding said gene product in a cell to reduce the activity or amount of said gene product in said cell, thereby producing a sensitized cell, wherein said gene product is selected from the group consisting of a gene product having having at least 70% nucleic acid identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213;

(b) contacting said sensitized cell with a compound; and

(c) determining the degree to which said compound inhibits the growth of said sensitized cell relative to a cell which does not contain said antisense nucleic acid.

223. The method of Paragraph 222, wherein said determining step comprises determining whether said compound inhibits the growth of said sensitized cell to a greater extent than said compound inhibits the growth of a nonsensitized cell.

224. The method of Paragraph 222, wherein said sensitized cell is a Gram positive bacterium.

225. The method of Paragraph 224, wherein said Gram positive bacterium is selected from the group consisting of *Staphylococcus* species, *Streptococcus* species, *Enterococcus* species, *Mycobacterium* species, *Clostridium* species, and *Bacillus* species.

226. The method of Paragraph 225, wherein said bacterium is *Staphylococcus aureus*.

227. The method of Paragraph 224, wherein said *Staphylococcus* species is coagulase negative.

228. The method of Paragraph 226, wherein said bacterium is selected from the group consisting of *Staphylococcus aureus* RN450 and *Staphylococcus aureus* RN4220.

229. The method of Paragraph 222, wherein said sensitized cell is an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

230. The method of Paragraph 222, wherein said cell is an organism other than *E. coli*.

231. The method of Paragraph 222, wherein said gene product is from an organism other than *E. coli*.

232. The method of Paragraph 222, wherein said antisense nucleic acid is transcribed from an inducible promoter.

233. The method of Paragraph 222, further comprising the step of contacting said cell with a concentration of inducer which induces transcription of said antisense nucleic acid to a sublethal level.

234. The method of Paragraph 222, wherein growth inhibition is measured by monitoring optical density of a culture medium.

235. The method of Paragraph 222, wherein said gene product is a polypeptide.

236. The method of Paragraph 235, wherein said polypeptide comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of

SEQ ID NOS.: 42398-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS: 42398-78581.

237. The method of Paragraph 222, wherein said gene product is an RNA.

238. The method of Paragraph 222, wherein said nucleic acid encoding said gene
5 product comprises a nucleic acid selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleic acid identity as determined using BLASTN version 2.0 with the default parameters to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid which hybridizes to a
10 sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

239. A compound identified using the method of Paragraph 222.

240. A method for inhibiting cellular proliferation comprising introducing a compound
with activity against a gene product or a compound with activity against a gene encoding said gene
15 product into a population of cells expressing said gene product, wherein said gene product is selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic
20 acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited
25 by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-
30 6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS: 1-6213.

241. The method of Paragraph 240, wherein said compound is an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, or a
35 proliferation-inhibiting portion thereof.

242. The method of Paragraph 240, wherein said proliferation inhibiting portion of one of SEQ ID NOS.: 1-6213 is a fragment comprising at least 10, at least 20, at least 25, at least 30, at least 50 or more than 51 consecutive nucleotides of one of SEQ ID NOS.: 1-6213.

243. The method of Paragraph 240, wherein said population is a population of Gram positive bacteria.

244. The method of Paragraph 243, wherein said population of Gram positive bacteria is selected from the group consisting of a population of *Staphylococcus* species, *Streptococcus* species, *Enterococcus* species, *Mycobacterium* species, *Clostridium* species, and *Bacillus* species.

245. The method of Paragraph 243, wherein said population is a population of *Staphylococcus aureus*.

246. The method of Paragraph 245, wherein said population is a population of a bacterium selected from the group consisting of *Staphylococcus aureus* RN450 and *Staphylococcus aureus* RN4220.

247. The method of Paragraph 240, wherein said population is a population of a bacterium selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

248. The method of Paragraph 240, wherein said population is a population of an organism other than *E. coli*.

249. The method of Paragraph 240, wherein said product of said gene is from an organism other than *E. coli*.

250. The method of Paragraph 240, wherein said gene product is selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using

FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs.: 42398-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs.: 42398-78581.

251. The method of Paragraph 240, wherein said gene comprises a nucleic acid selected
5 from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic
10 acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

252. A preparation comprising an effective concentration of an antisense nucleic acid in a pharmaceutically acceptable carrier wherein said antisense nucleic acid is selected from the group consisting of a nucleic acid comprising a sequence having at least 70% nucleotide sequence identity
15 as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 or a proliferation-inhibiting portion thereof, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group
20 consisting of SEQ ID NOs.: 1-6213 under moderate conditions.

253. The preparation of Paragraph 252, wherein said proliferation-inhibiting portion of one of SEQ ID NOs.: 1-6213 comprises at least 10, at least 20, at least 25, at least 30, at least 50 or more than 50 consecutive nucleotides of one of SEQ ID NOs.: 1-6213.

254. A method for inhibiting the activity or expression of a gene in an operon which
25 encodes a gene product required for proliferation comprising contacting a cell in a cell population with an antisense nucleic acid comprising at least a proliferation-inhibiting portion of said operon in an antisense orientation, wherein said gene product is selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic
30 acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least
35 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the

group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213.

255. The method of Paragraph 254, wherein said antisense nucleic acid comprises a nucleotide sequence having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a proliferation inhibiting portion thereof, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, and a nucleic acid which comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions.

256. The method of Paragraph 254, wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

257. The method of Paragraph 254, wherein said cell is not an *E. coli* cell.

258. The method of Paragraph 254, wherein said gene is from an organism other than *E. coli*.

259. The method of Paragraph 254, wherein said cell is contacted with said antisense nucleic acid by introducing a plasmid which transcribes said antisense nucleic acid into said cell population.

260. The method of Paragraph 254, wherein said cell is contacted with said antisense nucleic acid by introducing a phage which transcribes said antisense nucleic acid into said cell population.

261. The method of Paragraph 254, wherein said cell is contacted with said antisense nucleic acid by transcribing said antisense nucleic acid from the chromosome of cells in said cell population.

262. The method of Paragraph 254, wherein said cell is contacted with said antisense nucleic acid by introducing a promoter adjacent to a chromosomal copy of said antisense nucleic acid such that said promoter directs the synthesis of said antisense nucleic acid.

263. The method of Paragraph 254, wherein said cell is contacted with said antisense nucleic acid by introducing a retron which expresses said antisense nucleic acid into said cell population.

264. The method of Paragraph 254, wherein said cell is contacted with said antisense nucleic acid by introducing a ribozyme into said cell-population, wherein a binding portion of said ribozyme is complementary to said antisense oligonucleotide.

265. The method of Paragraph 254, wherein said cell is contacted with said antisense nucleic acid by introducing a liposome comprising said antisense oligonucleotide into said cell.

266. The method of Paragraph 254, wherein said cell is contacted with said antisense nucleic acid by electroporation of said antisense nucleic acid into said cell.

267. The method of Paragraph 254, wherein said antisense nucleic acid has at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence comprising at least 10, at least 20, at least 25, at least 30, at least 50 or more than 50 consecutive nucleotides of one of SEQ ID NOS.: 1-6213.

268. The method of Paragraph 254 wherein said antisense nucleic acid is a synthetic oligonucleotide.

269. The method of Paragraph 254, wherein said gene comprises a nucleic acid selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

270. A method for identifying a gene which is required for proliferation of a cell comprising:

- (a) contacting a cell with an antisense nucleic acid selected from the group consisting of a nucleic acid at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 or a proliferation-inhibiting portion thereof, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, wherein said cell is a cell other than the organism from which said nucleic acid was obtained;
- (b) determining whether said nucleic acid inhibits proliferation of said cell; and
- (c) identifying the gene in said cell which encodes the mRNA which is complementary to said antisense nucleic acid or a portion thereof.

271. The method of Paragraph 270, wherein said cell is selected from the group consisting of *Staphylococcus* species, *Streptococcus* species, *Enterococcus* species, *Mycobacterium* species, *Clostridium* species, and *Bacillus* species.

272. The method of Paragraph 270 wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

273. The method of Paragraph 270, wherein said cell is not *E. coli*.

274. The method of Paragraph 270, further comprising operably linking said antisense nucleic acid to a promoter which is functional in said cell, said promoter being included in a vector, and introducing said vector into said cell.

275. A method for identifying a compound having the ability to inhibit proliferation of a
5 cell comprising:

(a) identifying a homolog of a gene or gene product whose activity or level is inhibited by an antisense nucleic acid in a test cell, wherein said test cell is not the microorganism from which the antisense nucleic acid was obtained, wherein said antisense nucleic acid is selected from the group consisting of a nucleic acid having at least 70%
10 nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOs. 1-6213, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected
15 from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions;

(b) identifying an inhibitory nucleic acid sequence which inhibits the activity of said homolog in said test cell;

(c) contacting said test cell with a sublethal level of said inhibitory nucleic acid, thus sensitizing said cell;

20 (d) contacting the sensitized cell of step (c) with a compound; and

(e) determining the degree to which said compound inhibits proliferation of said sensitized cell relative to a cell which does not express said inhibitory nucleic acid.

276. The method of Paragraph 275, wherein said determining step comprises determining whether said compound inhibits proliferation of said sensitized test cell to a greater
25 extent than said compound inhibits proliferation of a nonsensitized test cell.

277. The method of Paragraph 275, wherein step (a) comprises identifying a homologous nucleic acid to a gene or gene product whose activity or level is inhibited by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID
30 NOs. 1-6213 or a nucleic acid encoding a homologous polypeptide to a polypeptide whose activity or level is inhibited by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOs. 1-6213 by using an algorithm selected from the group consisting of BLASTN version 2.0 with the default parameters and FASTA version 3.0t78
35 algorithm with the default parameters to identify said homologous nucleic acid or said nucleic acid encoding a homologous polypeptide in a database.

278. The method of Paragraph 275 wherein said step (a) comprises identifying a homologous nucleic acid or a nucleic acid encoding a homologous polypeptide by identifying

nucleic acids comprising nucleotide sequences which hybridize to said nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOs. 1-6213 or the complement of the nucleotide sequence of said nucleic acid selected from the group consisting of SEQ ID NOs. 1-6213.

279. The method of Paragraph 275 wherein step (a) comprises expressing a nucleic acid having at least 70% nucleic acid identity as determined using BLASTN version 2.0 with the default parameters to a sequence selected from the group consisting of SEQ ID NOs. 1-6213 in said test cell.

280. The method of Paragraph 275, wherein step (a) comprises identifying a homologous nucleic acid or a nucleic acid encoding a homologous polypeptide in an test cell selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

281. The method of Paragraph 275, wherein step (a) comprises identifying a homologous nucleic acid or a nucleic acid encoding a homologous polypeptide in a test cell other than *E. coli*.

282. The method of Paragraph 275, wherein said inhibitory nucleic acid is an antisense nucleic acid.

283. The method of Paragraph 275, wherein said inhibitory nucleic acid comprises an antisense nucleic acid to a portion of said homolog.

284. The method of Paragraph 275, wherein said inhibitory nucleic acid comprises an antisense nucleic acid to a portion of the operon encoding said homolog.

5 285. The method of Paragraph 275, wherein the step of contacting the cell with a sublethal level of said inhibitory nucleic acid comprises directly contacting said cell with said inhibitory nucleic acid.

286. The method of Paragraph 275, wherein the step of contacting the cell with a sublethal level of said inhibitory nucleic acid comprises expressing an antisense nucleic acid to said
10 homolog in said cell.

287. The method of Paragraph 275, wherein said gene product comprises a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOS.: 42398-78581.

288. The method of Paragraph 275, wherein said gene comprises a nucleic acid selected
15 from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid
20 comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

289. A compound identified using the method of Paragraph 275.

290. A method of identifying a compound having the ability to inhibit proliferation comprising:

25 (a) sensitizing a test cell by contacting said test cell with a sublethal level of an antisense nucleic acid, wherein said antisense nucleic acid is selected from the group consisting of a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS. 1-6213 or a portion thereof which inhibits the
30 proliferation of the cell from which said nucleic acid was obtained, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under moderate conditions;

35 (b) contacting the sensitized test cell of step (a) with a compound; and

(c) determining the degree to which said compound inhibits proliferation of said sensitized test cell relative to a cell which does not contain said antisense nucleic acid.

291. The method of Paragraph 290, wherein said determining step comprises determining whether said compound inhibits proliferation of said sensitized test cell to a greater extent than said compound inhibits proliferation of a nonsensitized test cell.

292. A compound identified using the method of Paragraph 290.

5 293. The method of Paragraph 290, wherein said test cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*,
10 *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
15 *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,
20 *Yersinia pestis* and any species falling within the genera of any of the above species.

294. The method of Paragraph 290, wherein the test cell is not *E. coli*.

295. A method for identifying a compound having activity against a biological pathway required for proliferation comprising:

30 (a) sensitizing a cell by providing a sublethal level of an antisense nucleic acid complementary to a nucleic acid encoding a gene product required for proliferation, wherein said gene product is selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.:
35 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid

comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs: 1-6213;

(b) contacting the sensitized cell with a compound; and

(c) determining the extent to which said compound inhibits the growth of said sensitized cell relative to a cell which does not contain said antisense nucleic acid.

296. The method of Paragraph 295, wherein said determining step comprises determining whether said compound inhibits the growth of said sensitized cell to a greater extent than said compound inhibits the growth of a nonsensitized cell.

297. The method of Paragraph 295, wherein said cell is selected from the group consisting of bacterial cells, fungal cells, plant cells, and animal cells.

298. The method of Paragraph 295, wherein said cell is a Gram positive bacterium.

299. The method of Paragraph 298, wherein said Gram positive bacterium is selected from the group consisting of *Staphylococcus* species, *Streptococcus* species, *Enterococcus* species, *Mycobacterium* species, *Clostridium* species, and *Bacillus* species.

300. The method of Paragraph 299, wherein said Gram positive bacterium is *Staphylococcus aureus*.

301. The method of Paragraph 298, wherein said Gram positive bacterium is selected from the group consisting of *Staphylococcus aureus* RN450 and *Staphylococcus aureus* RN4220.

302. The method of Paragraph 295, wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria*

monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
 5 *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma*
 10 *urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

303. The method of Paragraph 295, wherein said cell is not an *E. coli* cell.

304. The method of Paragraph 295, wherein said gene product is from an organism other than *E. coli*.

15 305. The method of Paragraph 295, wherein said antisense nucleic acid is transcribed from an inducible promoter.

306. The method of Paragraph 305, further comprising contacting the cell with an agent which induces expression of said antisense nucleic acid from said inducible promoter, wherein said antisense nucleic acid is expressed at a sublethal level.

20 307. The method of Paragraph 295, wherein inhibition of proliferation is measured by monitoring the optical density of a liquid culture.

308. The method of Paragraph 295, wherein said gene product comprises a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a sequence selected from the group consisting of SEQ ID NOS.: 42398-78581.

25 309. The method of Paragraph 295, wherein said nucleic acid encoding said gene product comprises a nucleic acid selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to
 30 a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

310. A compound identified using the method of Paragraph 295.

35 311. A method for identifying a compound having the ability to inhibit cellular proliferation comprising:

(a) contacting a cell with an agent which reduces the activity or level of a gene product required for proliferation of said cell, wherein said gene product is selected from

the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product
 5 encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the
 10 default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a
 15 nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213;

(b) contacting said cell with a compound; and
 20 (c) determining the degree to which said compound reduces proliferation of said contacted cell relative to a cell which was not contacted with said agent.

312. The method of Paragraph 311, wherein said determining step comprises determining whether said compound reduces proliferation of said contacted cell to a greater extent than said compound reduces proliferation of cells which have not been contacted with said agent.

25 313. The method of Paragraph 311, wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*,
 30 *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella*

haemolytica, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 5 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

314. The method of Paragraph 311, wherein said cell is not an *E. coli* cell.

10 315. The method of Paragraph 311, wherein said gene product is from an organism other than *E. coli*.

316. The method of Paragraph 311, wherein said agent which reduces the activity or level of a gene product required for proliferation of said cell comprises an antisense nucleic acid to a gene or operon required for proliferation.

15 317. The method of Paragraph 311, wherein said agent which reduces the activity or level of a gene product required for proliferation of said cell comprises a compound known to inhibit growth or proliferation of a cell.

318. The method of Paragraph 311, wherein said cell contains a mutation which reduces the activity or level of said gene product required for proliferation of said cell.

20 319. The method of Paragraph 311, wherein said mutation is a temperature sensitive mutation.

320. The method of Paragraph 311, wherein said gene product comprises a gene product comprises a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to an amino acid sequence selected from the group
 25 consisting of SEQ ID NOs.: 42398-78581.

321. A compound identified using the method of Paragraph 311.

322. A method for identifying the biological pathway in which a proliferation-required gene product or a gene encoding a proliferation-required gene product lies comprising:

(a) providing a sublethal level of an antisense nucleic acid which inhibits the
 30 activity or reduces the level of said gene encoding a proliferation-required gene product or said said proliferation-required gene product in a test cell, wherein said proliferation-required gene product is selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic
 35 acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid

comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs: 1-6213;

(b) contacting said test cell with a compound known to inhibit growth or proliferation of a cell, wherein the biological pathway on which said compound acts is known; and

(c) determining the degree to which said compound inhibits proliferation of said test cell relative to a cell which does not contain said antisense nucleic acid.

323. The method of Paragraph 322, wherein said determining step comprises determining whether said test cell has a substantially greater sensitivity to said compound than a cell which does not express said sublethal level of said antisense nucleic acid.

324. The method of Paragraph 322, wherein said gene product comprises a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

325. The method of Paragraph 322, wherein said test cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,

Pseudomonas aeruginosa, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

326. The method of Paragraph 322, wherein said test cell is not an *E. coli* cell.

327. The method of Paragraph 322, wherein said gene product is from an organism other than *E. coli*.

328. A method for determining the biological pathway on which a test compound acts comprising:

(a) providing a sublethal level of an antisense nucleic acid complementary to a proliferation-required nucleic acid in a cell, thereby producing a sensitized cell, wherein said antisense nucleic acid is selected from the group consisting of a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213 or a proliferation-inhibiting portion thereof, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions and wherein the biological pathway in which said proliferation-required nucleic acid or a protein encoded by said proliferation-required polypeptide lies is known,

(b) contacting said cell with said test compound; and

(c) determining the degree to which said compound inhibits proliferation of said sensitized cell relative to a cell which does not contain said antisense nucleic acid.

329. The method of Paragraph 328, wherein said determining step comprises determining whether said sensitized cell has a substantially greater sensitivity to said test compound than a cell which does not express said sublethal level of said antisense nucleic acid.

330. The method of Paragraph 328, further comprising:

(d) providing a sublethal level of a second antisense nucleic acid complementary to a second proliferation-required nucleic acid in a second cell, wherein said second proliferation-required nucleic acid is in a different biological pathway than said proliferation-required nucleic acid in step (a); and

(e) determining whether said second cell does not have a substantially greater sensitivity to said test compound than a cell which does not express said sublethal level of said second antisense nucleic acid, wherein said test compound is specific for the biological

pathway against which the antisense nucleic acid of step (a) acts if said sensitized cell has substantially greater sensitivity to said test compound than said second cell.

331. The method of Paragraph 328, wherein said sensitized cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*,
 5 *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*,
Candida glabrata (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*,
Candida guilliermondii, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*),
Candida dubliniensis, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium*
 10 *acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*,
Coccidioides immitis, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*,
Enterococcus faecalis, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*,
Helicobacter pylori, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*,
Listeria monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
 15 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*,
Neisseria gonorrhoeae, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*,
Pasteurella multocida, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
Pseudomonas aeruginosa, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*,
Salmonella choleraesuis, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella*
 20 *typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
Staphylococcus aureus, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*,
Streptococcus mutans, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*,
Vibrio cholerae, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,
Yersinia pestis and any species falling within the genera of any of the above species.

25 332. The method of Paragraph 328, wherein said sensitized cell is not an *E. coli* cell.

333. The method of Paragraph 328, wherein said proliferation-required nucleic acid is from an organism other than *E. coli*.

334. A compound which inhibits proliferation by interacting with a gene encoding a gene product required for proliferation or with a gene product required for proliferation, wherein
 30 said gene product is selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using
 35 BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product

whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213.

335. The compound of Paragraph 334, wherein said gene product comprises a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a sequence selected from the group consisting of SEQ ID NOS.: 42398-78581.

336. The compound of Paragraph 334, wherein said gene comprises a nucleic acid selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

337. A method for manufacturing an antibiotic comprising the steps of:
screening one or more candidate compounds to identify a compound that reduces the activity or level of a gene product required for proliferation wherein said gene product is selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the

gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs: 1-6213 ; and

manufacturing the compound so identified.

338. The method of Paragraph 337, wherein said screening step comprises performing
5 any one of the methods of Paragraphs 205, 211, 222, 275, 290, 295, 311.

339. The method of Paragraph 337, wherein said gene product comprises a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

10 340. A method for inhibiting proliferation of a cell in a subject comprising administering an effective amount of a compound that reduces the activity or level of a gene product required for proliferation of said cell, wherein said gene product is selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic
15 acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least
20 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a
25 nucleic acid comprising a nucleotide sequence which hybridizes to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs: 1-6213.

341. The method of Paragraph 340 wherein said subject is selected from the group
30 consisting of vertebrates, mammals, avians, and human beings.

342. The method of Paragraph 340, wherein said gene product comprises a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581.

35 343. The method of Paragraph 340, wherein said cell is selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida*

glabrata (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*,
 5 *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
 10 *pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 15 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

344. The method of Paragraph 340, wherein said cell is not *E. coli*.

20 345. The method of Paragraph 340, wherein said gene product is from an organism other than *E. coli*.

346. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

25 obtaining a culture comprising a plurality of strains wherein each strain in said culture overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed;

30 contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

35 identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture.

347. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain in said culture overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture.

348. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain in said culture overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture.

349. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain in said culture overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide

sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture.

350. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain in said culture overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture.

351. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

5 obtaining a culture comprising a plurality of strains wherein each strain in said culture overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 and a polypeptide whose activity may be
10 complemented by a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on
15 which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture.

20 352. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said culture includes at least one strain which does not overexpresses a gene product which is essential for proliferation of said organism.

353. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said strains which overexpress said gene products comprise a nucleic acid encoding said gene product which is
25 essential for proliferation of said organism operably linked to a regulatable promoter.

354. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said strains which overexpress said gene products a nucleic acid encoding said gene product which is essential for proliferation of said organism operably linked to a constitutive promoter.

355. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said
30 identification step comprises determining the nucleotide sequence of a nucleic acid encoding said gene product in said cell which proliferated more rapidly in said culture.

356. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said identification step comprises performing an amplification reaction to identify the nucleic acid encoding said gene product in said cell which proliferated more rapidly in said cell culture.

35 357. The method of Paragraph 356, wherein the products of said amplification reaction are labeled with a detectable dye.

358. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said identification step comprises performing a hybridization procedure.

359. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said identification step comprises contacting a nucleic acid array with a nucleic acid encoding said gene product in said cell which proliferated more rapidly in said cell culture.

360. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said organism is
5 selected from the group consisting of bacteria, fungi, and protozoa.

361. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said culture is a culture of an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*,
10 *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*,
15 *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*,
25 *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

362. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said compound is obtained from a library of natural compounds.

363. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said compound
30 is obtained from a library of synthetic compounds.

364. The method of Paragraph 346, 347, 348, 349, 350 or 351, wherein said compound is present in a crude or partially purified state.

365. The method of Paragraph 346, 347, 348, 349, 350 or 351, further comprising
35 determining whether said gene product in said strain which proliferated more rapidly in said culture has a counterpart in at least one other organism.

366. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining an array of strains on a solid growth medium wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed;

contacting said array of strains with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly on said solid medium.

367. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining an array of strains on a solid growth medium wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed;

contacting said array of strains with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly on said solid medium.

368. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining an array of strains on a solid growth medium wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed;

contacting said array of strains with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly on said solid medium.

369. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

5 obtaining an array of strains on a solid growth medium wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression
10 is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the
15 group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide
20 sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide
25 sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed;

contacting said array of strains with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not
30 overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly on said solid medium.

370. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

35 obtaining an array of strains on a solid growth medium wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid

comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of
5 SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed;

contacting said array of strains with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene
10 product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly on said solid medium.

15 371. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining an array of strains on a solid growth medium wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprises a polypeptide
20 selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS: 42938-78581 is overexpressed;

25 contacting said array of strains with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

30 identifying the gene product which is overexpressed in a strain which proliferated more rapidly on said solid medium.

372. The method of Paragraph 366, 367, 368, 369, 370 or 371, wherein at least one strain in said array does not overexpresses a gene product which is essential for proliferation of said organism.

35 373. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, wherein each culture comprises a plurality of strains wherein each strain overexpresses a different gene product which is essential for

proliferation of said organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed;

contacting each of said cultures with a different concentration of said compound;

5 and

identifying the gene product which is overexpressed in a strain whose proliferation is inhibited by said compound.

374. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

10 obtaining a plurality of cultures, wherein each culture comprises a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed;

15 contacting each of said cultures with a different concentration of said compound; and

identifying the gene product which is overexpressed in a strain whose proliferation is inhibited by said compound.

20 375. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, wherein each culture comprises a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed;

25 contacting each of said cultures with a different concentration of said compound; and

identifying the gene product which is overexpressed in a strain whose proliferation is inhibited by said compound.

30 376. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, wherein each culture comprises a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene

product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213 is overexpressed;

contacting each of said cultures with a different concentration of said compound;
and

identifying the gene product which is overexpressed in a strain whose proliferation is inhibited by said compound.

377. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, wherein each culture comprises a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed;

contacting each of said cultures with a different concentration of said compound;

and

identifying the gene product which is overexpressed in a strain whose proliferation is inhibited by said compound.

378. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, wherein each culture comprises a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 is overexpressed;

contacting each of said cultures with a different concentration of said compound; and

identifying the gene product which is overexpressed in a strain whose proliferation is inhibited by said compound.

379. The method of Paragraph 373, 374, 375, 376, 377 or 378, wherein at least one strain in said plurality of cultures does not overexpress a gene product which is essential for proliferation of said organism.

380. A method of profiling a compound's activity comprising:
performing the method of Paragraph 346 on a first culture using a first compound;
performing the method of Paragraph 346 on a second culture using a second compound; and
comparing the strains identified in said first culture to the strains identified in said second culture.

381. A method of profiling a compound's activity comprising:
performing the method of Paragraph 347 on a first culture using a first compound;
performing the method of Paragraph 347 on a second culture using a second compound; and
comparing the strains identified in said first culture to the strains identified in said second culture.

382. A method of profiling a compound's activity comprising:
performing the method of Paragraph 348 on a first culture using a first compound;
performing the method of Paragraph 348 on a second culture using a second compound; and
comparing the strains identified in said first culture to the strains identified in said second culture.

383. A method of profiling a compound's activity comprising:
performing the method of Paragraph 349 on a first culture using a first compound;

performing the method of Paragraph 349 on a second culture using a second compound; and

comparing the strains identified in said first culture to the strains identified in said second culture.

5 384. A method of profiling a compound's activity comprising:
performing the method of Paragraph 350 on a first culture using a first compound;
performing the method of Paragraph 350 on a second culture using a second compound; and

10 comparing the strains identified in said first culture to the strains identified in said second culture.

385. A method of profiling a compound's activity comprising:
performing the method of Paragraph 351 on a first culture using a first compound;
performing the method of Paragraph 351 on a second culture using a second compound; and

15 comparing the strains identified in said first culture to the strains identified in said second culture.

386. A method of profiling a first compound's activity comprising:
growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein each strain in said array overexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

20 comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

387. A method of profiling a first compound's activity comprising:
growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein each strain in said array overexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

35 comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

388. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein each strain in said array overexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

389. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein each strain in said array overexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

390. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein each strain in said array overexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

391. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein each strain in said array overexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 is overexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

392. The method of any one of Paragraphs 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390 or 391, wherein said first compound is present in a crude or partially purified state.

393. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress said gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more slowly in said culture.

394. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress said gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more slowly in said culture.

395. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress said gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more slowly in said culture.

396. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress said gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more slowly in said culture.

397. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid

comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress said gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more slowly in said culture.

398. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS: 42938-78581 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress said gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more slowly in said culture.

399. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein at least one strain in said culture does not underexpresses a gene product which is essential for proliferation of said organism.

400. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said strains which underexpress said gene products comprise a nucleic acid complementary to at least a portion of a gene encoding said gene product which is essential for proliferation of said organism operably linked to a regulatable promoter.

401. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said strains which underexpress said gene products express an antisense nucleic acid complementary to at least

a portion of a gene encoding said gene product which is essential for proliferation of said organism, wherein expression of said antisense nucleic acid reduces expression of said gene product in said strain.

402. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said
5 identification step comprises determining the nucleotide sequence of a nucleic acid encoding said gene product in said strain which proliferated more slowly.

403. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said identification step comprises performing an amplification reaction to identify the nucleic acid encoding said gene product in said cell which proliferated more slowly.

10 404. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein the products of said amplification reaction are labeled with a detectable dye.

405. The method of Paragraph 404, wherein said identification step comprises performing a hybridization procedure.

406. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said
15 identification step comprises contacting a nucleic acid array with a nucleic acid encoding said gene product in said cell which proliferated more slowly.

407. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said organism is selected from the group consisting of bacteria, fungi, protozoa.

408. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said culture is a
20 culture of an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr*
25 (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*,
30 *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*,
35 *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*,

Ureaplasma urealyticum, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

409. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said compound is obtained from a library of natural compounds.

5 410. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said compound is obtained from a library of synthetic compounds.

411. The method of Paragraph 393, 394, 395, 396, 397 or 398, wherein said compound is present in a crude or partially purified state.

412. The method of Paragraph 393, 394, 395, 396, 397 or 398, further comprising
10 determining whether said gene product in said strain which proliferated more slowly in said culture has a counterpart in at least one other organism.

413. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, each culture comprising a plurality of strains
15 wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is underexpressed;

contacting each of said cultures with a different concentration of said compound;
20 and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

414. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

25 obtaining a plurality of cultures, each culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is underexpressed;

30 contacting each of said cultures with a different concentration of said compound; and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

415. A method for identifying the gene product on which a compound which inhibits
35 proliferation of an organism acts comprising:

obtaining a plurality of cultures, each culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene

product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is underexpressed;

contacting each of said cultures with a different concentration of said compound;

and

5 identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

416. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, each culture comprising a plurality of strains
10 wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a
15 nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA
20 version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by
25 a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is underexpressed;

contacting each of said cultures with a different concentration of said compound;

and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

35 417. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, each culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for

proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to
5 a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate
10 conditions is underexpressed;

contacting each of said cultures with a different concentration of said compound;
and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

15 418. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures, each culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene
20 product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS: 42938-78581 is underexpressed;

25 contacting each of said cultures with a different concentration of said compound;
and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

419. A method of profiling a compound's activity comprising:

30 performing the method of Paragraph 393 on a first culture using a first compound;
performing the method of Paragraph 393 on a second culture using a second compound; and

comparing the strains identified in said first culture to the strains identified in said second culture.

35 420. A method of profiling a compound's activity comprising:

performing the method of Paragraph 394 on a first culture using a first compound;
performing the method of Paragraph 394 on a second culture using a second compound; and

comparing the strains identified in said first culture to the strains identified in said second culture.

421. A method of profiling a compound's activity comprising:

performing the method of Paragraph 395 on a first culture using a first compound;

5 performing the method of Paragraph 395 on a second culture using a second compound; and

comparing the strains identified in said first culture to the strains identified in said second culture.

422. A method of profiling a compound's activity comprising

10 performing the method of Paragraph 396 on a first culture using a first compound;

performing the method of Paragraph 396 on a second culture using a second compound; and

comparing the strains identified in said first culture to the strains identified in said second culture.

15 423. A method of profiling a compound's activity comprising

performing the method of Paragraph 397 on a first culture using a first compound;

performing the method of Paragraph 397 on a second culture using a second compound; and

20 comparing the strains identified in said first culture to the strains identified in said second culture.

424. A method of profiling a compound's activity comprising

performing the method of Paragraph 398 on a first culture using a first compound;

performing the method of Paragraph 398 on a second culture using a second compound; and

25 comparing the strains identified in said first culture to the strains identified in said second culture.

425. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound

and on a second solid medium comprising a second compound, wherein said array

30 comprises a plurality of strains wherein each strain underexpresses a different gene product

which is essential for proliferation of an organism, wherein said culture comprises a strain

in which a gene product whose activity or level is inhibited by a nucleic acid comprising a

nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is

35 underexpressed, and wherein said first compound and said second compound inhibit the

proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the

pattern of strains which grow on said second solid medium.

426. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein said array comprises a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain
5 in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is underexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the
10 pattern of strains which grow on said second solid medium.

427. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein said array comprises a plurality of strains wherein each strain underexpresses a different gene product
15 which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is underexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the
20 pattern of strains which grow on said second solid medium.

428. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein said array comprises a plurality of strains wherein each strain underexpresses a different gene product
25 which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.:
30 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA
35 version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group

consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is underexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

429. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein said array comprises a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is underexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

430. A method of profiling a first compound's activity comprising:

growing an array of strains on a first solid medium comprising said first compound and on a second solid medium comprising a second compound, wherein said array comprises a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of an organism, wherein said culture comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs.: 42938-78581 is underexpressed, and wherein said first compound and said second compound inhibit the proliferation of said organism; and

comparing the pattern of strains which grow on said first solid medium with the pattern of strains which grow on said second solid medium.

431. The method of any one of Paragraphs 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429 or 430, wherein said first compound is present in a crude or partially purified state.

5 432. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is underexpressed;

10 contacting each of said plurality of cultures with a varying concentration of a regulatory agent which regulates the level of expression of said gene products which are essential for proliferation of said organism; and

15 identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

433. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

20 obtaining a plurality of cultures comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is underexpressed;

25 contacting each of said plurality of cultures with a varying concentration of a regulatory agent which regulates the level of expression of said gene products which are essential for proliferation of said organism; and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

30 434. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

35 obtaining a plurality of cultures comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is underexpressed;

contacting each of said plurality of cultures with a varying concentration of a regulatory agent which regulates the level of expression of said gene products which are essential for proliferation of said organism; and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

435. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

5 obtaining a plurality of cultures comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product
10 whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide
15 sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213 is underexpressed;

contacting each of said plurality of cultures with a varying concentration of a regulatory agent which regulates the level of expression of said gene products which are essential for proliferation of said organism; and

30 identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

436. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

35 obtaining a plurality of cultures comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as

determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is underexpressed;

contacting each of said plurality of cultures with a varying concentration of a regulatory agent which regulates the level of expression of said gene products which are essential for proliferation of said organism; and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

437. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a plurality of cultures comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 is underexpressed;

contacting each of said plurality of cultures with a varying concentration of a regulatory agent which regulates the level of expression of said gene products which are essential for proliferation of said organism; and

identifying the gene product which is underexpressed in a strain whose rate of proliferation is reduced by said compound.

438. A culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213 is overexpressed.

439. A culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 is overexpressed.

440. A culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture

comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed.

441. A culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture
5 comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a
10 gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide
15 sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose
20 activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed.

442. A culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture
25 comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected
30 from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed.

443. A culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism, wherein said culture
35 comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs.: 42938-78581

and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 is overexpressed.

444. The culture of Paragraph 438, 439, 440, 441, 442 or 443, wherein said strains which overexpress said gene products comprise a nucleic acid encoding said gene product which is essential for proliferation of said organism operably linked to a regulatable promoter.

445. The culture of Paragraph 438, 439, 440, 441, 442 or 443, wherein said strains which overexpress said gene products comprise a nucleic acid encoding said gene product which is essential for proliferation of said organism operably linked to a constitutive promoter.

446. The culture of Paragraph 438, 439, 440, 441, 442 or 443, wherein said culture is a culture of an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

447. A culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213 is underexpressed.

448. A culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture

comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is underexpressed.

449. A culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture
5 comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is underexpressed.

450. A culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product
10 having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a
15 gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a
20 nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid
25 comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is underexpressed.

451. A culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide
30 sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic
35 acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is underexpressed.

452. A culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism, wherein said culture

comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 is underexpressed.

453. The culture of Paragraph 447, 448, 449, 450, 451 or 452, wherein said strains which underexpress said gene products comprise a nucleic acid encoding said gene product which is essential for proliferation of said organism operably linked to a regulatable promoter.

454. The culture of Paragraph 447, 448, 449, 450, 451 or 452, wherein said strains which underexpress said gene products comprise a nucleic acid encoding said gene product which is essential for proliferation of said organism operably linked to a constitutive promoter.

455. The culture of Paragraph 447, 448, 449, 450, 451 or 452, wherein said culture is a culture of an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

456. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the overexpressed genes has been altered so

as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the overexpressed genes, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

457. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the overexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the overexpressed genes, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

458. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the overexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the overexpressed genes, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

459. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the overexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the overexpressed genes, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

460. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

5 obtaining a culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the overexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the overexpressed genes, wherein said culture comprises a strain
10 in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a
15 sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit
20 the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated
25 more rapidly in said culture by detecting the unique product corresponding to said gene.

461. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain overexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the overexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the overexpressed genes, wherein said culture comprises a strain
30 in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the
35 group consisting of SEQ ID NOS.: 42938-78581 is overexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which do not overexpress said gene product on which said compound acts, such that strains which overexpress said gene product on which said compound acts proliferate more rapidly than strains which do not overexpress said gene product on which said compound acts; and

identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

462. The method of Paragraph 456, 457, 458, 459, 460 or 461, wherein the nucleotide sequence of each of the genes encoding an overexpressed gene product has been altered by replacing the native promoters of said genes with promoters which facilitate overexpression of said gene products.

463. The method of Paragraph 456, 457, 458, 459, 460 or 461, wherein the nucleotide sequence of each of the genes encoding an overexpressed gene product has been altered by inserting a regulatory element into the native promoters of said genes with a promoter which facilitates overexpression of said gene products.

464. The method of Paragraph 463, wherein said regulatory element is selected from the group consisting of a regulatable promoter, an operator which is recognized by a repressor, a nucleotide sequence which is recognized by a transcriptional activator, a transcriptional terminator, a nucleotide sequence which introduces a bend in the DNA and an upstream activating sequence.

465. The method of Paragraph 456, 457, 458, 459, 460 or 461, wherein the step of identifying the gene product which is overexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene comprises performing an amplification reaction and detecting a unique amplification product corresponding to said gene.

466. The method of Paragraph 462, wherein the native promoter of each of the genes encoding a gene product essential for proliferation is replaced with the same promoter.

467. The method of Paragraph 462, wherein the native promoters of the genes encoding gene products essential for proliferation are replaced with a plurality of promoters selected to give a desired expression level for each gene product.

468. The method of Paragraph 462, wherein said promoters which replaced the native promoters in each strain comprise regulatable promoters.

469. The method of Paragraph 462, wherein said promoters which replaced the native promoters in each strain each strain comprise constitutive promoters.

470. The method of Paragraph 456, 457, 458, 459, 460 or 461, wherein said organism is selected from the group consisting of bacteria, fungi, and protozoa.

471. The method of Paragraph 456, 457, 458, 459, 460 or 461, wherein said culture is a culture of an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*,

Campylobacter jejuni, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

472. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the underexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the underexpressed genes and wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress the gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

473. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the underexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product
5 corresponding to each of the underexpressed genes and wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which
10 said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress the gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

15 474. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the underexpressed genes has been altered
20 so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the underexpressed genes, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which
25 said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress the gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

30 475. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism
35 and wherein the nucleotide sequence of each of the underexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the underexpressed genes, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at

least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is underexpressed;

contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress the gene product on which said compound acts; and

identifying the gene product which is underexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

476. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the underexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the underexpressed genes, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent

conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is underexpressed;

5 contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress the gene product on which said compound acts; and

10 identifying the gene product which is underexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

477. A method for identifying the gene product on which a compound which inhibits proliferation of an organism acts comprising:

15 obtaining a culture comprising a plurality of strains wherein each strain underexpresses a different gene product which is essential for proliferation of said organism and wherein the nucleotide sequence of each of the underexpressed genes has been altered so as to include a nucleotide sequence which can be used to generate a unique product corresponding to each of the underexpressed genes, wherein said culture comprises a strain in which a gene product comprises a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 20 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS: 42938-78581 is underexpressed;

25 contacting said culture with a sufficient concentration of said compound to inhibit the proliferation of strains of said organism which underexpress said gene product on which said compound acts, such that strains which underexpress said gene product on which said compound acts proliferate more slowly than strains which do not underexpress the gene product on which said compound acts; and

30 identifying the gene product which is underexpressed in a strain which proliferated more rapidly in said culture by detecting the unique product corresponding to said gene.

478. The method of Paragraph 472, 473, 474, 475, 476 or 477, wherein the nucleotide sequence of each of the genes encoding an underexpressed gene product has been altered by replacing the native promoters of said genes with promoters which facilitate underexpression of said gene products.

35 479. The method of Paragraph 472, 473, 474, 475, 476 or 477, wherein the nucleotide sequence of each of the genes encoding an underexpressed gene product has been altered by inserting a regulatory element into the native promoters of said genes with a promoter which facilitates underexpression of said gene products.

480. The method of Paragraph 479, wherein said regulatory element is selected from the group consisting of a regulatable promoter, an operator which is recognized by a repressor, a nucleotide sequence which is recognized by a transcriptional activator, a transcriptional terminator, a nucleotide sequence which introduces a bend in the DNA and an upstream activating sequence.

5 481. The method of Paragraph 472, 473, 474, 475, 476 or 477, wherein the step of identifying the gene product which is underexpressed in a strain which proliferated more slowly in said culture by detecting the unique product corresponding to said gene comprises performing an amplification reaction and detecting a unique amplification product corresponding to said gene.

482. The method of Paragraph 478, wherein the native promoter of each of the genes
10 encoding a gene product essential for proliferation is replaced with the same promoter.

483. The method of Paragraph 478, wherein the native promoters of the genes encoding gene products essential for proliferation are replaced with a plurality of promoters selected to give a desired expression level for each gene product.

484. The method of Paragraph 478, wherein said promoters which replaced the native
15 promoters in each strain comprise regulatable promoters.

485. The method of Paragraph 478, wherein said promoters which replaced the native promoters in each strain each strain comprise constitutive promoters.

486. The method of Paragraph 472, 473, 474, 475, 476 or 477, wherein said organism is selected from the group consisting of bacteria, fungi, and protozoa.

20 487. The method of Paragraph 472, 473, 474, 475, 476 or 477, wherein said culture is a culture of an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*),
25 *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*,
30 *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*,

Streptococcus pneumoniae, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* and any species falling within the genera of any of the above species.

488. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed or underexpressed;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction.

489. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed or underexpressed;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction.

490. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

5 obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group
10 consisting of SEQ ID NOs.: 42938-78581 is overexpressed or underexpressed;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the
15 lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction.

20 491. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which
25 is required for proliferation of said organism, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.:
30 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA
35 version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group

consisting of SEQ ID NOS.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213 is overexpressed or underexpressed;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction.

492. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed or underexpressed;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction.

493. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

5 obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism, wherein said culture comprises a strain in which a gene product comprising a polypeptide selected from the group consisting of a
10 polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 is overexpressed or underexpressed;

performing an amplification reaction using a set of primer pairs which are
15 complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or
20 collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction.

494. The method of Paragraph 488, 489, 490, 491, 492 or 493, wherein one member of each primer pair for each of said genes is labeled with a detectable dye.

25 495. The method of Paragraph 488, 489, 490, 491, 492 or 493, wherein:

said nucleic acid sample is divided into N aliquots; and

said amplification reaction is performed on each aliquot using primer pairs complementary to nucleotide sequences within or adjacent to 1/N of the genes which encode said gene products, wherein one of the members of each primer pair in each aliquot
30 is labeled with a dye and wherein the dyes on the primers in each aliquot are distinguishable from one another.

496. The method of Paragraph 494, further comprising pooling the amplification products from each of the aliquots prior to determining the lengths of the amplification products.

497. The method of Paragraph 488, 489, 490, 491, 492 or 493, wherein the native
35 promoters of said genes which encode said gene products have been replaced with a regulatable promoter and one of the primers in said primer pairs is complementary to a nucleotide sequence within said regulatable promoter.

498. The method of Paragraph 496, wherein the native promoters for each of said genes were replaced with the same regulatable promoter.

499. The method of Paragraph 496, wherein more than one regulatable promoter was used to replace the promoters of said genes such that some of said genes are under the control of a
5 different regulatable promoter.

500. A method for identifying the target of a compound which inhibits the proliferation of an organism comprising:

obtaining a first nucleic acid sample comprising nucleic acids from a first culture or collection of strains wherein said culture or collection of strains comprises a plurality of
10 strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism and wherein said culture or collection of strains has been contacted with said compound;

obtaining a second nucleic acid sample comprising nucleic acids from a second culture or collection of strains wherein said culture or collection of strains comprises the
15 same strains as said first culture or collection of strains wherein said second culture or collection of strains has not been contacted with said compound;

performing a first amplification reaction on said first nucleic acid sample using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs
20 are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains;

performing a second amplification reaction on said second nucleic acid sample
25 using the same set of primer pairs used in said first amplification reaction;

and comparing the amount of each amplification product in said first amplification reaction to the amount of that amplification product in said second amplification reaction, wherein an increased level of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding
30 to said amplification product is the target of said compound if said culture or strain overexpresses said gene products and a decreased level of of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound
if said culture or strain overexpresses said gene products, wherein said first and second
35 cultures or collection of strains comprise a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed or underexpressed.

501. A method for identifying the target of a compound which inhibits the proliferation of an organism comprising:

obtaining a first nucleic acid sample comprising nucleic acids from a first culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism and wherein said culture or collection of strains has been contacted with said compound;

obtaining a second nucleic acid sample comprising nucleic acids from a second culture or collection of strains wherein said culture or collection of strains comprises the same strains as said first culture or collection of strains wherein said second culture or collection of strains has not been contacted with said compound;

performing a first amplification reaction on said first nucleic acid sample using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains;

performing a second amplification reaction on said second nucleic acid sample using the same set of primer pairs used in said first amplification reaction;

and comparing the amount of each amplification product in said first amplification reaction to the amount of that amplification product in said second amplification reaction, wherein an increased level of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products and a decreased level of of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products, wherein said first and second cultures or collection of strains comprise a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed or underexpressed.

502. A method for identifying the target of a compound which inhibits the proliferation of an organism comprising:

obtaining a first nucleic acid sample comprising nucleic acids from a first culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which

is required for proliferation of said organism and wherein said culture or collection of strains has been contacted with said compound;

obtaining a second nucleic acid sample comprising nucleic acids from a second culture or collection of strains wherein said culture or collection of strains comprises the same strains as said first culture or collection of strains wherein said second culture or collection of strains has not been contacted with said compound;

performing a first amplification reaction on said first nucleic acid sample using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains;

performing a second amplification reaction on said second nucleic acid sample using the same set of primer pairs used in said first amplification reaction;

and comparing the amount of each amplification product in said first amplification reaction to the amount of that amplification product in said second amplification reaction, wherein an increased level of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products and a decreased level of of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products, wherein said first and second cultures or collection of strains comprise a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed or underexpressed.

503. A method for identifying the target of a compound which inhibits the proliferation of an organism comprising:

obtaining a first nucleic acid sample comprising nucleic acids from a first culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism and wherein said culture or collection of strains has been contacted with said compound;

obtaining a second nucleic acid sample comprising nucleic acids from a second culture or collection of strains wherein said culture or collection of strains comprises the same strains as said first culture or collection of strains wherein said second culture or collection of strains has not been contacted with said compound;

performing a first amplification reaction on said first nucleic acid sample using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains;

performing a second amplification reaction on said second nucleic acid sample using the same set of primer pairs used in said first amplification reaction;

and comparing the amount of each amplification product in said first amplification reaction to the amount of that amplification product in said second amplification reaction, wherein an increased level of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products and a decreased level of of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products, wherein said first and second cultures or collection of strains comprise a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed or underexpressed.

504. A method for identifying the target of a compound which inhibits the proliferation of an organism comprising:

obtaining a first nucleic acid sample comprising nucleic acids from a first culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism and wherein said culture or collection of strains has been contacted with said compound;

obtaining a second nucleic acid sample comprising nucleic acids from a second culture or collection of strains wherein said culture or collection of strains comprises the same strains as said first culture or collection of strains wherein said second culture or collection of strains has not been contacted with said compound;

performing a first amplification reaction on said first nucleic acid sample using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains;

performing a second amplification reaction on said second nucleic acid sample using the same set of primer pairs used in said first amplification reaction;

and comparing the amount of each amplification product in said first amplification reaction to the amount of that amplification product in said second amplification reaction, wherein an increased level of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products and a decreased level of of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products, wherein said first and second cultures or collection of strains comprise a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from

the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed or underexpressed.

505. A method for identifying the target of a compound which inhibits the proliferation of an organism comprising:

5 obtaining a first nucleic acid sample comprising nucleic acids from a first culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains wherein each strain overexpresses or underexpresses a different gene product which is required for proliferation of said organism and wherein said culture or collection of strains has been contacted with said compound;

10 obtaining a second nucleic acid sample comprising nucleic acids from a second culture or collection of strains wherein said culture or collection of strains comprises the same strains as said first culture or collection of strains wherein said second culture or collection of strains has not been contacted with said compound;

15 performing a first amplification reaction on said first nucleic acid sample using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains;

20 performing a second amplification reaction on said second nucleic acid sample using the same set of primer pairs used in said first amplification reaction;

25 and comparing the amount of each amplification product in said first amplification reaction to the amount of that amplification product in said second amplification reaction, wherein an increased level of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products and a decreased level of of an amplification product in said first amplification reaction relative to said second amplification reaction indicates that
30 the gene product corresponding to said amplification product is the target of said compound if said culture or strain overexpresses said gene products, wherein said first and second culture or collection of strains comprise a strain in which a gene product comprising a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be
35 complemented by a polypeptide selected from the group consisting of SEQ ID NOS: 42938-78581 is overexpressed or underexpressed.

506. The method of Paragraph 500, 501, 502, 503, 504 or 505, wherein one member of each primer pair for each of said genes is labeled with a detectable dye.

507. The method of Paragraph 500, 501, 502, 503, 504 or 505, wherein the native promoters of said genes which encode said gene products have been replaced with a regulatable promoter and one of the primers in said primer pairs is complementary to a nucleotide sequence within said regulatable promoter.

508. The method of Paragraph 500, 501, 502, 503, 504 or 505, wherein the native promoters for each of said genes were replaced with the same regulatable promoter.

509. The method of Paragraph 500, 501, 502, 503, 504 or 505, wherein more than one regulatable promoter was used to replace the promoters of said genes such that some of said genes are under the control of a different regulatable promoter.

510. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which transcribe an antisense nucleic acid complementary to a different gene product which is required for proliferation of said organism;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the nucleic acids which encode said antisense nucleic acids, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed or underexpressed.

511. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which transcribe an antisense nucleic acid complementary to a different gene product which is required for proliferation of said organism;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the nucleic acids which encode said antisense nucleic acids, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length

distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

5 determining the lengths of the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed or underexpressed.

512. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

10 obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which transcribe an antisense nucleic acid complementary to a different gene product which is required for proliferation of said organism;

15 performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the nucleic acids which encode said antisense nucleic acids, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

20 determining the lengths of the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed or underexpressed.

25 513. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

30 obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which transcribe an antisense nucleic acid complementary to a different gene product which is required for proliferation of said organism;

35 performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the nucleic acids which encode said antisense nucleic acids, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed or underexpressed.

514. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which transcribe an antisense nucleic acid complementary to a different gene product which is required for proliferation of said organism;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the nucleic acids which encode said antisense nucleic acids, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as

determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed or underexpressed.

515. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which transcribe an antisense nucleic acid complementary to a different gene product which is required for proliferation of said organism;

performing an amplification reaction using a set of primer pairs which are complementary to nucleotide sequences within or adjacent to the nucleic acids which encode said antisense nucleic acids, wherein the members of said set of primer pairs are designed such that each primer pair would yield an amplification product having a length distinguishable from the lengths of the amplification products from the other primer pairs if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

determining the lengths of the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product comprising a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 is overexpressed or underexpressed.

516. The method of Paragraph 510, 511, 512, 513, 514 or 515, wherein one member of each primer pair for each of said genes is labeled with a detectable dye.

517. The method of Paragraph 510, 511, 512, 513, 514 or 515, wherein:

said nucleic acid sample is divided into N aliquots; and

said amplification reaction is performed on each aliquot using primer pairs complementary to nucleotide sequences within or adjacent to 1/N of the genes which encode said gene products, wherein one of the members of each primer pair in each aliquot is labeled with a dye and wherein the dyes on the primers in each aliquot are distinguishable from one another.

518. The method of Paragraph 517, further comprising pooling the amplification products from each of the aliquots prior to determining the lengths of the amplification products.

519. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

5 obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which overexpress or underexpress a different gene product which is required for proliferation of said organism;

10 performing an amplification reaction using primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein said primer pairs are designed such that each primer pair would yield an amplification product which is distinguishable from the amplification products produced by the other primer pairs on the a basis selected from the group consisting of length, detectable label and both length and detectable label if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

15 identifying the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed or underexpressed.

520. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

20 obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which overexpress or underexpress a different gene product which is required for proliferation of said organism;

25 performing an amplification reaction using primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein said primer pairs are designed such that each primer pair would yield an amplification product which is distinguishable from the amplification products produced by the other primer pairs on the a basis selected from the group consisting of length, detectable label and both length and detectable label if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

30 identifying the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397 is overexpressed or underexpressed.

35 521. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of

strains which overexpress or underexpress a different gene product which is required for proliferation of said organism;

performing an amplification reaction using primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein said primer pairs are designed such that each primer pair would yield an amplification product which is distinguishable from the amplification products produced by the other primer pairs on the a basis selected from the group consisting of length, detectable label and both length and detectable label if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

identifying the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed or underexpressed.

522. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which overexpress or underexpress a different gene product which is required for proliferation of said organism;

performing an amplification reaction using primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein said primer pairs are designed such that each primer pair would yield an amplification product which is distinguishable from the amplification products produced by the other primer pairs on the a basis selected from the group consisting of length, detectable label and both length and detectable label if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

identifying the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide

sequence selected from the group consisting of SEQ ID NOS.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213 is overexpressed or underexpressed.

523. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of strains which overexpress or underexpress a different gene product which is required for proliferation of said organism;

performing an amplification reaction using primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein said primer pairs are designed such that each primer pair would yield an amplification product which is distinguishable from the amplification products produced by the other primer pairs on the basis selected from the group consisting of length, detectable label and both length and detectable label if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

identifying the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed or underexpressed.

524. A method for determining the extent to which each of a plurality of strains are present in a culture or collection of strains comprising:

obtaining a nucleic acid sample comprising nucleic acids from a culture or collection of strains wherein said culture or collection of strains comprises a plurality of

strains which overexpress or underexpress a different gene product which is required for proliferation of said organism;

performing an amplification reaction using primer pairs which are complementary to nucleotide sequences within or adjacent to the genes which encode said gene products, wherein said primer pairs are designed such that each primer pair would yield an amplification product which is distinguishable from the amplification products produced by the other primer pairs on the basis selected from the group consisting of length, detectable label and both length and detectable label if a strain comprising the nucleotide sequences complementary to said primer pair is present in said culture or collection of strains; and

identifying the amplification products obtained in said amplification reaction, wherein said culture comprises a strain in which a gene product comprising a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 is overexpressed or underexpressed.

525. The method of Paragraph 519, 520, 521, 522, 523 or 524, wherein said primer pairs are divided into at least two sets, each primer pair comprises a primer which is labeled with a distinguishable dye, and the distinguishable dye used to label each set of primer pairs is distinguishable from the dye used to label the other sets of primer pairs.

526. The method of Paragraph 519, 520, 521, 522, 523 or 524, wherein:

said nucleic acid sample is divided into N aliquots; and

said amplification reaction is performed on each aliquot using primer pairs complementary to nucleotide sequences within or adjacent to 1/N of the genes which encode said gene products, wherein one of the members of each primer pair in each aliquot is labeled with a dye and wherein the dyes on the primers in each aliquot are distinguishable from one another.

527. The method of Paragraph 526, further comprising pooling the amplification products from each of the aliquots prior to determining the lengths of the amplification products.

528. The method of Paragraph 519, 520, 521, 522, 523 or 524, wherein the native promoters of said genes which encode said gene products have been replaced with a regulatable promoter and one of the primers in said primer pairs is complementary to a nucleotide sequence within said regulatable promoter.

529. The method of Paragraph 528, wherein the native promoters for each of said genes were replaced with the same regulatable promoter.

530. The method of Paragraph 528, wherein more than one regulatable promoter was used to replace the promoters of said genes such that some of said genes are under the control of a different regulatable promoter.

Definitions

By "biological pathway" is meant any discrete cell function or process that is carried out by a gene product or a subset of gene products. Biological pathways include anabolic, catabolic, enzymatic, biochemical and metabolic pathways as well as pathways involved in the production of cellular structures such as cell walls. Biological pathways that are usually required for proliferation of cells or microorganisms include, but are not limited to, cell division, DNA synthesis and replication, RNA synthesis (transcription), protein synthesis (translation), protein processing, protein transport, fatty acid biosynthesis, electron transport chains, cell wall synthesis, cell membrane production, synthesis and maintenance, and the like.

By "inhibit activity of a gene or gene product" is meant having the ability to interfere with the function of a gene or gene product in such a way as to decrease expression of the gene, in such a way as to reduce the level or activity of a product of the gene or in such a way as to inhibit the interaction of the gene or gene product with other biological molecules required for its activity. Agents which inhibit the activity of a gene include agents that inhibit transcription of the gene, agents that inhibit processing of the transcript of the gene, agents that reduce the stability of the transcript of the gene, and agents that inhibit translation of the mRNA transcribed from the gene. In microorganisms, agents which inhibit the activity of a gene can act to decrease expression of the operon in which the gene resides or alter the folding or processing of operon RNA so as to reduce the level or activity of the gene product. The gene product can be a non-translated RNA such as ribosomal RNA, a translated RNA (mRNA) or the protein product resulting from translation of the gene mRNA. Of particular utility to the present invention are antisense RNAs that have activities against the operons or genes to which they specifically hybridize.

By "activity against a gene product" is meant having the ability to inhibit the function or to reduce the level or activity of the gene product in a cell. This includes, but is not limited to, inhibiting the enzymatic activity of the gene product or the ability of the gene product to interact with other biological molecules required for its activity, including inhibiting the gene product's assembly into a multimeric structure.

By "activity against a protein" is meant having the ability to inhibit the function or to reduce the level or activity of the protein in a cell. This includes, but is not limited to, inhibiting the enzymatic activity of the protein or the ability of the protein to interact with other biological molecules required for its activity, including inhibiting the protein's assembly into a multimeric structure.

By "activity against a nucleic acid" is meant having the ability to inhibit the function or to reduce the level or activity of the nucleic acid in a cell. This includes, but is not limited to, inhibiting the ability of the nucleic acid interact with other biological molecules required for its activity, including inhibiting the nucleic acid's assembly into a multimeric structure.

By "activity against a gene" is meant having the ability to inhibit the function or expression of the gene in a cell. This includes, but is not limited to, inhibiting the ability of the gene to interact with other biological molecules required for its activity.

By "activity against an operon" is meant having the ability to inhibit the function or reduce the level of one or more products of the operon in a cell. This includes, but is not limited to, inhibiting the enzymatic activity of one or more products of the operon or the ability of one or more products of the operon to interact with other biological molecules required for its activity.

By "antibiotic" is meant an agent which inhibits the proliferation of a cell or microorganism.

By "*E. coli* or *Escherichia coli*" is meant *Escherichia coli* or any organism previously categorized as a species of *Shigella* including *Shigella boydii*, *Shigella flexneri*, *Shigella dysenteriae*, *Shigella sonnei*, *Shigella 2A*.

By "homologous coding nucleic acid" is meant a nucleic acid homologous to a nucleic acid encoding a gene product whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 or a portion thereof. In some embodiments, the homologous coding nucleic acid may have at least 97%, at least 95%, at least 90%, at least 85%, at least 80%, or at least 70% nucleotide sequence identity to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42,397 and fragments comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides thereof. In other embodiments the homologous coding nucleic acids may have at least 97%, at least 95%, at least 90%, at least 85%, at least 80%, or at least 70% nucleotide sequence identity to a nucleotide sequence selected from the group consisting of the nucleotide sequences complementary to one of SEQ ID NOS.: 1-6213 and fragments comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides thereof. Identity may be measured using BLASTN version 2.0 with the default parameters or tBLASTX with the default parameters. (Altschul, S.F. et al. Gapped BLAST and PSI-BLAST: A New Generation of Protein Database Search Programs, *Nucleic Acid Res.* 25: 3389-3402 (1997). Alternatively a "homologous coding nucleic acid" could be identified by membership of the gene of interest to a functional orthologue cluster. All other members of that orthologue cluster would be considered homologues. Such a library of functional orthologue clusters can be found at <http://www.ncbi.nlm.nih.gov/COG>. A gene can be classified into a cluster of orthologous groups or COG by using the COGNITOR program available at the above web site, or by direct BLASTP comparison of the gene of interest to the members of the COGs and analysis of these results as described by Tatusov, R.L., Galperin, M.Y., Natale, D. A. and Koonin, E.V. (2000) The COG database: a tool for genome-scale analysis of protein functions and evolution. *Nucleic Acids Research* v. 28 n. 1, pp33-36.

Homologous coding nucleic acids and the homologous polypeptides which they encode may also be identified using a "reciprocal" best-hit analysis. To facilitate the identification of homologous coding nucleic acids and homologous polypeptides, paralogous genes within each of

51 organisms are identified and clustered prior to comparison to other organisms. Briefly, the polypeptide sequence of each polypeptide encoded by each open reading frame (ORF) in a given organism is compared to the polypeptide sequence encoded by every other ORF for that organism for each of the 51 pathogenic organisms (PathoSeq Sept 2001 release) using BLASTP 2.09 algorithm without filtering. Simultaneously, the polypeptide sequence encoded by each ORF of an organism is compared to the polypeptide sequences encoded by each of the ORFs in the remaining 51 organisms. Those polypeptides within a single organism that shared a higher degree of sequence identity to one another than to polypeptide sequences obtained from any other organisms are clustered as "paralog" sequences for "reciprocal" best-hit analysis.

For each reference organism, the 50 homologous coding nucleic acids (and the 50 homologous polypeptides which they encode) can be determined by identifying the ORFs in each of the 50 comparison organisms which encode a polypeptide sharing the highest degree of amino acid sequence identity to the polypeptide encoded by the ORF from the reference organism. The accuracy of the identification of the predicted homologous coding nucleic acids (and the homologous polypeptides which they encode) is confirmed by a "reciprocal" BLAST analysis in which the polypeptide sequence of the predicted homologous polypeptide is compared against the polypeptides encoded by each of the ORFs in the reference organism using BLASTP 2.09 algorithm without filtering. Only those polypeptides that share the highest degree of amino acid sequence identity in each portion of the two-way comparison are retained for further analysis.

The term "homologous coding nucleic acid" also includes nucleic acids comprising nucleotide sequences which encode polypeptides having at least 99%, 95%, at least 90%, at least 85%, at least 80%, at least 70%, at least 60%, at least 50%, at least 40% or at least 25% amino acid identity or similarity to a polypeptide comprising the amino acid sequence of one of SEQ ID NOs: 42,398-78,581 or to a polypeptide whose expression is inhibited by a nucleic acid comprising a nucleotide sequence of one of SEQ ID NOs: 1-6213 or fragments comprising at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids thereof as determined using the FASTA version 3.0t78 algorithm with the default parameters. Alternatively, protein identity or similarity may be identified using BLASTP with the default parameters, BLASTX with the default parameters, TBLASTN with the default parameters, or tBLASTX with the default parameters. (Altschul, S.F. et al. Gapped BLAST and PSI-BLAST: A New Generation of Protein Database Search Programs, Nucleic Acid Res. 25: 3389-3402 (1997).

Additionally, homologous coding nucleic acids and the homologous polypeptides which they encode may be identified using a "reciprocal" best-hit analysis. To facilitate the identification of homologous coding nucleic acids and homologous polypeptides, paralogous genes within each of 51 organisms are identified and clustered prior to comparison to other organisms. Briefly, the polypeptide sequence of each polypeptide encoded by each open reading frame (ORF) in a given organism is compared to the polypeptide sequence encoded by every other ORF for that organism for each of the 51 pathogenic organisms (PathoSeq Sept 2001 release) using BLASTP 2.09

algorithm without filtering. Simultaneously, the polypeptide sequence encoded by each ORF of an organism is compared to the polypeptide sequences encoded by each of the ORFs in the remaining 51 organisms. Those polypeptides within a single organism that shared a higher degree of sequence identity to one another than to polypeptide sequences obtained from any other organisms are clustered as "paralog" sequences for "reciprocal" best-hit analysis.

For each reference organism, the 50 homologous coding nucleic acids (and the 50 homologous polypeptides which they encode) can be determined by identifying the ORFs in each of the 50 comparison organisms which encode a polypeptide sharing the highest degree of amino acid sequence identity to the polypeptide encoded by the ORF from the reference organism. The accuracy of the identification of the predicted homologous coding nucleic acids (and the homologous polypeptides which they encode) is confirmed by a "reciprocal" BLAST analysis in which the polypeptide sequence of the predicted homologous polypeptide is compared against the polypeptides encoded by each of the ORFS in the reference organism using BLASTP 2.09 algorithm without filtering. Only those polypeptides that share the highest degree of amino acid sequence identity in each portion of the two-way comparison are retained for further analysis.

The term "homologous coding nucleic acid" also includes coding nucleic acids which hybridize under stringent conditions to a nucleic acid selected from the group consisting of the nucleotide sequences complementary to one of SEQ ID NOS.: 6214-42,397 and coding nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of the sequences complementary to one of SEQ ID NOS.: 6214-42,397. As used herein, "stringent conditions" means hybridization to filter-bound nucleic acid in 6xSSC at about 45°C followed by one or more washes in 0.1xSSC/0.2% SDS at about 68°C. Other exemplary stringent conditions may refer, e.g., to washing in 6xSSC/0.05% sodium pyrophosphate at 37°C, 48°C, 55°C, and 60°C as appropriate for the particular probe being used.

The term "homologous coding nucleic acid" also includes coding nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a nucleotide sequence selected from the group consisting of the sequences complementary to one of SEQ ID NOS.: 6214-42,397 and coding nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of the sequences complementary to one of SEQ ID NOS.: 6214-42,397. As used herein, "moderate conditions" means hybridization to filter-bound DNA in 6x sodium chloride/sodium citrate (SSC) at about 45°C followed by one or more washes in 0.2xSSC/0.1% SDS at about 42-65°C.

The term "homologous coding nucleic acids" also includes nucleic acids comprising nucleotide sequences which encode a gene product whose activity may be complemented by a gene encoding a gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213. In some embodiments, the

homologous coding nucleic acids may encode a gene product whose activity is complemented by the gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42,397. In other embodiments, the homologous coding nucleic acids may comprise a nucleotide sequence encode a gene product whose activity is
 5 complemented by one of the polypeptides of SEQ ID NOS. 42,398-78,581.

The term "homologous antisense nucleic acid" includes nucleic acids comprising a nucleotide sequence having at least 97%, at least 95%, at least 90%, at least 85%, at least 80%, or at least 70% nucleotide sequence identity to a nucleotide sequence selected from the group consisting of one of the sequences of SEQ ID NOS. 1-6213 and fragments comprising at least 10, 15, 20, 25,
 10 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides thereof. Homologous antisense nucleic acids may also comprising nucleotide sequences which have at least 97%, at least 95%, at least 90%, at least 85%, at least 80%, or at least 70% nucleotide sequence identity to a nucleotide sequence selected from the group consisting of the sequences complementary to one of sequences of SEQ ID NOS.: 6214-42,397 and fragments comprising at least 10, 15, 20, 25, 30, 35,
 15 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides thereof. Nucleic acid identity may be determined as described above.

The term "homologous antisense nucleic acid" also includes antisense nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a nucleotide sequence complementary to one of SEQ ID NOS.: 1-6213 and antisense nucleic acids comprising
 20 nucleotide sequences which hybridize under stringent conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of the sequence complementary to one of SEQ ID NOS. 1-6213. Homologous antisense nucleic acids also include antisense nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-
 25 42,397 and antisense nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of one of SEQ ID NOS.: 6214-42,397.

The term "homologous antisense nucleic acid" also includes antisense nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a nucleotide
 30 sequence complementary to one of SEQ ID NOS.: 1-6213 and antisense nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of the sequence complementary to one of SEQ ID NOS. 1-6213. Homologous antisense nucleic acids also include antisense nucleic acids comprising nucleotide sequences which hybridize under moderate
 35 conditions to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42,397 and antisense nucleic acids which comprising nucleotide sequences hybridize under moderate conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of one of SEQ ID NOS.: 6214-42,397.

By "homologous polypeptide" is meant a polypeptide homologous to a polypeptide whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 or by a homologous antisense nucleic acid. The term "homologous polypeptide" includes polypeptides having at least 99%, 95%, at least 90%, at least 85%, at least 80%, at least 70%, at least 60%, at least 50%, at least 40% or at least 25% amino acid identity or similarity to a polypeptide whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 or by a homologous antisense nucleic acid, or polypeptides having at least 99%, 95%, at least 90%, at least 85%, at least 80%, at least 70%, at least 60%, at least 50%, at least 40% or at least 25% amino acid identity or similarity to a polypeptide to a fragment comprising at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids of a polypeptide whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 or by a homologous antisense nucleic acid. Identity or similarity may be determined using the FASTA version 3.0t78 algorithm with the default parameters. Alternatively, protein identity or similarity may be identified using BLASTP with the default parameters, BLASTX with the default parameters, or TBLASTN with the default parameters. (Altschul, S.F. et al. Gapped BLAST and PSI-BLAST: A New Generation of Protein Database Search Programs, *Nucleic Acid Res.* 25: 3389-3402 (1997). Additionally, homologous coding nucleic acids and the homologous polypeptides which they encode may be identified using a "reciprocal" best-hit analysis. To facilitate the identification of homologous coding nucleic acids and homologous polypeptides, paralogous genes within each of 51 organisms are identified and clustered prior to comparison to other organisms. Briefly, the polypeptide sequence of each polypeptide encoded by each open reading frame (ORF) in a given organism is compared to the polypeptide sequence encoded by every other ORF for that organism for each of the 51 pathogenic organisms (PathoSeq Sept 2001 release) using BLASTP 2.09 algorithm without filtering. Simultaneously, the polypeptide sequence encoded by each ORF of an organism is compared to the polypeptide sequences encoded by each of the ORFs in the remaining 51 organisms. Those polypeptides within a single organism that shared a higher degree of sequence identity to one another than to polypeptide sequences obtained from any other organisms are clustered as "paralog" sequences for "reciprocal" best-hit analysis.

For each reference organism, the 50 homologous coding nucleic acids (and the 50 homologous polypeptides which they encode) can be determined by identifying the ORFs in each of the 50 comparison organisms which encode a polypeptide sharing the highest degree of amino acid sequence identity to the polypeptide encoded by the ORF from the reference organism. The accuracy of the identification of the predicted homologous coding nucleic acids (and the homologous polypeptides which they encode) is confirmed by a "reciprocal" BLAST analysis in which the polypeptide sequence of the predicted homologous polypeptide is compared against the polypeptides encoded by each of the ORFS in the reference organism using BLASTP 2.09

algorithm without filtering. Only those polypeptides that share the highest degree of amino acid sequence identity in each portion of the two-way comparison are retained for further analysis.

The term homologous polypeptide also includes polypeptides having at least 99%, 95%, at least 90%, at least 85%, at least 80%, at least 70%, at least 60%, at least 50%, at least 40% or at least 25% amino acid identity or similarity to a polypeptide selected from the group consisting of SEQ ID NOs: 42,398-78,581 and polypeptides having at least 99%, 95%, at least 90%, at least 85%, at least 80%, at least 70%, at least 60%, at least 50%, at least 40% or at least 25% amino acid identity or similarity to a fragment comprising at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids of a polypeptide selected from the group consisting of SEQ ID NOs: 42,398-78,581.

The invention also includes polynucleotides, preferably DNA molecules, that hybridize to one of the nucleic acids of SEQ ID NOs.: 1-6213, SEQ ID NOs.: 6214-42,397 or the complements of any of the preceding nucleic acids. Such hybridization may be under stringent or moderate conditions as defined above or under other conditions which permit specific hybridization. The nucleic acid molecules of the invention that hybridize to these DNA sequences include oligodeoxynucleotides ("oligos") which hybridize to the target gene under highly stringent or stringent conditions. In general, for oligos between 14 and 70 nucleotides in length the melting temperature (T_m) is calculated using the formula:

$$T_m (^{\circ}\text{C}) = 81.5 + 16.6(\log[\text{monovalent cations (molar)}] + 0.41 (\% \text{ G+C}) - (500/N))$$

where N is the length of the probe. If the hybridization is carried out in a solution containing formamide, the melting temperature may be calculated using the equation:

$$T_m (^{\circ}\text{C}) = 81.5 + 16.6(\log[\text{monovalent cations (molar)}] + 0.41(\% \text{ G+C}) - (0.61) (\% \text{ formamide}) - (500/N))$$

where N is the length of the probe. In general, hybridization is carried out at about 20-25 degrees below T_m (for DNA-DNA hybrids) or about 10-15 degrees below T_m (for RNA-DNA hybrids).

Other hybridization conditions are apparent to those of skill in the art (see, for example, Ausubel, F.M. *et al.*, eds., 1989, *Current Protocols in Molecular Biology*, Vol. I, Green Publishing Associates, Inc. and John Wiley & Sons, Inc., New York, at pp. 6.3.1-6.3.6 and 2.10.3.

The term, *Salmonella*, is the generic name for a large group of gram negative enteric bacteria that are closely related to *Escherichia coli*. The diseases caused by *Salmonella* are often due to contamination of foodstuffs or the water supply and affect millions of people each year. Traditional methods of *Salmonella* taxonomy were based on assigning a separate species name to each serologically distinguishable strain (Kauffmann, F 1966 The bacteriology of the *Enterobacteriaceae*. Munksgaard, Copenhagen). Serology of *Salmonella* is based on surface antigens (O [somatic] and H [flagellar]). Over 2,400 serotypes or serovars of *Salmonella* are known (Popoff, *et al.* 2000 Res. Microbiol. 151:63-65). Therefore, each serotype was considered to

be a separate species and often given names, accordingly (e.g. *S. paratyphi*, *S. typhimurium*, *S. typhi*, *S. enteritidis*, etc.).

However, by the 1970s and 1980s it was recognized that this system was not only cumbersome, but also inaccurate. Then, many *Salmonella* species were lumped into a single species (all serotypes and subgenera I, II, and IV and all serotypes of *Arizona*) with a second subspecies, *S. bongorii* also recognized (Crosa, et al., 1973, J. Bacteriol. 115:307-315). Though species designations are based on the highly variable surface antigens, the *Salmonella* are very similar otherwise with a major exception being pathogenicity determinants.

There has been some debate on the correct name for the *Salmonella* species. Currently (Brenner, et al. 2000 J. Clin. Microbiol. 38:2465-2467), the accepted name is *Salmonella enterica*. *S. enterica* is divided into six subspecies (I, *S. enterica* subsp. *enterica*; II, *S. enterica*, subsp. *salamae*; IIIa, *S. enterica* subsp. *arizonae*; IIIb, *S. enterica* subsp. *diarizonae*; IV, *S. enterica* subsp. *houtenae*; and VI, *S. enterica* subsp. *indica*). Within subspecies I, serotypes are used to distinguish each of the serotypes or serovars (e.g. *S. enterica* serotype Enteritidis, *S. enterica* serotype Typhimurium, *S. enterica* serotype Typhi, and *S. enterica* serotype Choleraesuis, etc.). Current convention is to spell this out on first usage (*Salmonella enterica* ser. Typhimurium) and then use an abbreviated form (*Salmonella* Typhimurium or *S. Typhimurium*). Note, the genus and species names (*Salmonella enterica*) are italicized but not the serotype/serovar name (Typhimurium). Because the taxonomic committees have yet to officially approve of the actual species name, this latter system is what is employed by the CDC (Brenner, et al. 2000 J. Clin. Microbiol. 38:2465-2467). Due to the concerns of both taxonomic priority and medical importance, some of these serotypes might ultimately receive full species designations (*S. typhi* would be the most notable).

Therefore, as used herein "*Salmonella enterica* or *S. enterica*" includes serovars Typhi, Typhimurium, Paratyphi, Choleraesuis, etc." However, appeals of the "official" name are in process and the taxonomic designations may change (*S. choleraesuis* is the species name that could replace *S. enterica* based solely on priority).

By "identifying a compound" is meant to screen one or more compounds in a collection of compounds such as a combinatorial chemical library or other library of chemical compounds or to characterize a single compound by testing the compound in a given assay and determining whether it exhibits the desired activity.

By "inducer" is meant an agent or solution which, when placed in contact with a cell or microorganism, increases transcription, or inhibitor and/or promoter clearance/fidelity, from a desired promoter.

As used herein, "nucleic acid" means DNA, RNA, or modified nucleic acids. Thus, the terminology "the nucleic acid of SEQ ID NO: X" or "the nucleic acid comprising the nucleotide sequence" includes both the DNA sequence of SEQ ID NO: X and an RNA sequence in which the thymidines in the DNA sequence have been substituted with uridines in the RNA sequence and in which the deoxyribose backbone of the DNA sequence has been substituted with a ribose backbone

in the RNA sequence. Modified nucleic acids are nucleic acids having nucleotides or structures which do not occur in nature, such as nucleic acids in which the internucleotide phosphate residues with methylphosphonates, phosphorothioates, phosphoramidates, and phosphate esters. Nonphosphate internucleotide analogs such as siloxane bridges, carbonate bridges, thioester bridges, as well as many others known in the art may also be used in modified nucleic acids. Modified nucleic acids may also comprise, α -anomeric nucleotide units and modified nucleotides such as 1,2-dideoxy-d-ribofuranose, 1,2-dideoxy-1-phenylribofuranose, and N^4 , N^4 -ethano-5-methyl-cytosine are contemplated for use in the present invention. Modified nucleic acids may also be peptide nucleic acids in which the entire deoxyribose-phosphate backbone has been exchanged with a chemically completely different, but structurally homologous, polyamide (peptide) backbone containing 2-aminoethyl glycine units.

As used herein, "sub-lethal" means a concentration of an agent below the concentration required to inhibit all cell growth.

Brief Description of the Drawings

Figure 1A illustrates a method for replacing a promoter using a promoter replacement cassette comprising a 5' region homologous to the sequence which is 5' of the natural promoter in the chromosome, the promoter which is to replace the chromosomal promoter and a 3' region which is homologous to sequences 3' of the natural promoter in the chromosome.

Figure 1B illustrates a method for replacing a promoter using a promoter replacement cassette comprising a nucleic acid encoding an identifiable or selectable marker disposed between the 5' region which is homologous to the sequence 5' of the natural promoter and the promoter which is to replace the chromosomal promoter and a transcriptional terminator 3' of the gene encoding an identifiable or selectable marker.

Figures 2A and 2B illustrate one method for identifying amplification products which are underrepresented or overrepresented in a culture.

Figures 3A and 3B illustrate another method for identifying amplification products which are underrepresented or overrepresented in a culture.

Figure 4 illustrates the results of a hybridization analysis where the antisense nucleic acid expressed by a strain in the culture is not complementary to all or a portion of the gene encoding the target of the compound (i.e. a nonspecific strain).

Figure 5 illustrates the results of a hybridization analysis where the antisense nucleic acid expressed by a strain in the culture is complementary to all or a portion of the gene encoding the target of the compound, the hybridization intensity for that strain will be intimately correlated with the concentration of the compound (i.e. a specific strain).

Figure 6 illustrates an oligonucleotide comprising a lac operator flanked on each side by 40 nucleotides homologous to the promoter is the promoter which drives expression of the *yabB yabC ftsL ftsI murE* genes in an operon for use in inserting the lac operator into the promoter.

Figure 7 is an IPTG dose response curve in *E. coli* transformed with an IPTG-inducible plasmid containing either an antisense clone to the *E. coli* ribosomal protein *rplW* (AS-*rplW*) which is required for protein synthesis and essential for cell proliferation, or an antisense clone to the *elaD* (AS-*elaD*) gene which is not known to be involved in protein synthesis and which is also essential for proliferation.

Figure 8A is a tetracycline dose response curve in *E. coli* transformed with an IPTG-inducible plasmid containing antisense to *rplW* (AS-*rplW*) in the absence (0) or presence of IPTG at concentrations that result in 20% and 50% growth inhibition.

Figure 8B is a tetracycline dose response curve in *E. coli* transformed with an IPTG-inducible plasmid containing antisense to *elaD* (AS-*elaD*) in the absence (0) or presence of IPTG at concentrations that result in 20% and 50% growth inhibition.

Figure 9 is a graph showing the fold increase in tetracycline sensitivity of *E. coli* transfected with antisense clones to essential ribosomal proteins *L23* (AS-*rplW*) and *L7/L12* and *L10* (AS-*rplLrplJ*). Antisense clones to genes known to not be directly involved in protein synthesis, *atpB/E* (AS-*atpB/E*), *visC* (AS-*visC*), *elaD* (AS-*elaD*), *yohH* (AS-*yohH*), are much less sensitive to tetracycline.

Figure 10 illustrates the results of an assay in which *Staphylococcus aureus* cells transcribing an antisense nucleic acid complementary to the *gyrB* gene encoding the β subunit of gyrase were contacted with several antibiotics whose targets were known.

Figure 11 illustrates a microtitration plate which contains antibiotic and inducer at gradient concentrations in a matrix format in 10 times excess quantity.

Figure 12 illustrates the results of an experiment demonstrating that at appropriate concentrations of inducer, cells which overexpress the *defB* gene product were able to grow at elevated concentrations of the antibiotic actinonin.

Figure 13 illustrates the results of an experiment demonstrating that at appropriate concentrations of inducer cells which overexpress the *folA* gene product were able to grow at elevated concentrations of the antibiotic trimethoprim.

Figure 14 illustrates the results of an experiment demonstrating that overexpression of the *fabI* gene confers resistance to triclosan, which acts on the gene product of the *fabI* gene, but does not confer resistance to cerulenin, trimethoprim, or actinonin, each of which act on other gene products.

Figure 15 illustrates the results of an experiment demonstrating that overexpression of the *folA* gene confers resistance to trimethoprim, which acts on the gene product of the *folA* gene but does not confer resistance to triclosan, cerulenin, or actinonin, each of which act on other gene products.

Figure 16 illustrates the results of an experiment demonstrating that overexpression of the *defB* gene conferred resistance to actinonin, which acts on the gene product of the *defB* gene but

does not confer resistance to cerulenin, trimethoprim, or triclosan, each of which act on other gene products.

Figure 17 illustrates the results of an experiment demonstrating that overexpression of the *fabF* gene conferred resistance to cerulenin, which acts on the gene product of the *fabF* gene, β keto-acyl carrier protein synthase but does not confer resistance to triclosan, trimethoprim, or actinonin, each of which act on other gene products.

Figure 18 illustrates the results of experiments in which a mixture of nine strains was grown wells in a 96 well plate in medium containing various concentrations of inducer and a sufficient concentration of actinonin, cerulenin, triclosan or trimethoprim to inhibit the growth of strains which do not overexpress the targets of these antibiotics.

Detailed Description of Embodiments of the Invention

The present invention describes a group of prokaryotic genes and gene families required for cellular proliferation. Exemplary genes and gene families from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholera* and *Yersinia pestis* are provided. A proliferation-required gene or gene family is one where, in the absence or substantial reduction of a gene transcript and/or gene product, growth or viability of the cell or microorganism is reduced or eliminated. Thus, as used herein, the terminology "proliferation-required" or "required for proliferation" encompasses instances where the absence or substantial reduction of a gene transcript and/or gene product completely eliminates cell growth as well as instances where the absence of a gene transcript and/or gene product merely reduces cell growth. These proliferation-required genes can be used as potential targets for the generation of new antimicrobial agents. To achieve that goal, the present invention also encompasses assays for analyzing proliferation-required genes and for identifying compounds which interact with the gene and/or gene products of the proliferation-required genes. In addition, the present invention contemplates the expression of genes and the purification of the proteins encoded by the nucleic acid sequences identified as required proliferation genes and reported herein. The purified proteins can be

used to generate reagents and screen small molecule libraries or other candidate compound libraries for compounds that can be further developed to yield novel antimicrobial compounds.

The present invention also describes methods for identification of nucleotide sequences homologous to these genes and polypeptides described herein, including nucleic acids comprising nucleotide sequences homologous to the nucleic acids of SEQ ID NOS.: 6214-42397 and polypeptides homologous to the polypeptides of SEQ ID NOS.: 42398-78581. For example, these sequences may be used to identify homologous coding nucleic acids, homologous antisense nucleic acids, or homologous polypeptides in microorganisms such as *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diptheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species. In some embodiments, the homologous coding nucleic acids, homologous antisense nucleic acids, or homologous polypeptides are identified in an organism other than *E. coli*.

The homologous coding nucleic acids, homologous antisense nucleic acids, or homologous polypeptides, may then be used in each of the methods described herein, including methods of identifying compounds which inhibit the proliferation of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods of inhibiting the growth of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods of identifying compounds which influence the activity or level of a gene product required for proliferation of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous

polypeptide, methods for identifying compounds or nucleic acids having the ability to reduce the level or activity of a gene product required for proliferation of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods of inhibiting the activity or expression of a gene in an operon required for proliferation of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods for identifying a gene required for proliferation of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods for identifying the biological pathway in which a gene or gene product required for proliferation of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide lies, methods for identifying compounds having activity against biological pathway required for proliferation of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods for determining the biological pathway on which a test compound acts in the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods of replacing an endogenous promoter with a regulatable promoter which controls the expression of the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods of inserting an operator within or near an endogenous promoter to provide regulatable expression of the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, methods of identifying the target on which a compound acts in the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide, and methods of inhibiting the proliferation of the organism containing the homologous coding nucleic acid, homologous antisense nucleic acid or homologous polypeptide in a subject. In some embodiments of the present invention, the methods are performed using an organism, other than *E. coli* or a gene or gene product from an organism other than *E. coli*.

One embodiment of the present invention utilizes a novel method to identify proliferation-required sequences. Generally, a library of nucleic acid sequences from a given source are subcloned or otherwise inserted immediately downstream of an inducible promoter on an appropriate vector, such as a *Staphylococcus aureus*/*E. coli* or *Pseudomonas aeruginosa*/*E. coli* shuttle vector, or a vector which will replicate in both *Salmonella typhimurium* and *Klebsiella pneumoniae*, or other vector or shuttle vector capable of functioning in the intended organism, thus forming an expression library. It is generally preferred that expression is directed by a regulatable promoter sequence such that expression level can be adjusted by addition of variable concentrations of an inducer molecule or of an inhibitor molecule to the medium. For example, a number of regulatable promoters useful for regulating the expression of nucleic acid sequences over a wide range of expression levels are described in U.S. Patent Application Serial Number 10/032,393, filed December 21, 2001. Temperature activated promoters, such as promoters regulated by temperature sensitive repressors, such as the lambda C₁₈₅₇ repressor, are also envisioned. Although the insert nucleic acids may be derived from the chromosome

of the cell or microorganism into which the expression vector is to be introduced, because the insert is not in its natural chromosomal location, the insert nucleic acid is an exogenous nucleic acid for the purposes of the discussion herein. The term "expression" is defined as the production of a sense or antisense RNA molecule from a gene, gene fragment, genomic fragment, chromosome, operon or
5 portion thereof. Expression can also be used to refer to the process of peptide or polypeptide synthesis. An expression vector is defined as a vehicle by which a ribonucleic acid (RNA) sequence is transcribed from a nucleic acid sequence carried within the expression vehicle. The expression vector can also contain features that permit translation of a protein product from the transcribed RNA message expressed from the exogenous nucleic acid sequence carried by the expression vector. Accordingly, an
10 expression vector can produce an RNA molecule as its sole product or the expression vector can produce a RNA molecule that is ultimately translated into a protein product.

Once generated, the expression library containing the exogenous nucleic acid sequences is introduced into a population of cells (such as the organism from which the exogenous nucleic acid sequences were obtained) to search for genes that are required for bacterial proliferation. Because the
15 library molecules are foreign, in context, to the population of cells, the expression vectors and the nucleic acid segments contained therein are considered exogenous nucleic acid.

Expression of the exogenous nucleic acid fragments in the test population of cells containing the expression library is then activated. Activation of the expression vectors consists of subjecting the cells containing the vectors to conditions that result in the expression of the exogenous nucleic acid
20 sequences carried by the expression library. The test population of cells is then assayed to determine the effect of expressing the exogenous nucleic acid fragments on the test population of cells. Those expression vectors that negatively impact the growth of the cells upon induction of expression of the random sequences contained therein are identified, isolated, and purified for further study.

In some embodiments, vectors which comprises a regulatable fusion promoter selected
25 from a suite of fusion promoters, wherein the promoter suite is useful for modulating both the basal and maximal levels of transcription of a nucleic acid over a wide dynamic range thus allowing the desired level of production of a transcript, can be used to express exogenous nucleic acids, including the nucleic acids of the present invention. Such promoters are described in U.S. Patent Application Serial Number 10/032,393, filed December 21, 2001, the disclosure of which is
30 incorporated herein by reference in its entirety.

In some other embodiments, vectors useful for the production of stabilized mRNA having an increased lifetime (including antisense RNA) in Gram negative organisms are described in U.S. Provisional Patent Application Serial Number 60/343,512, filed December 21, 2001. Briefly, the stabilized antisense RNA may comprise an antisense RNA which was identified as inhibiting
35 proliferation as described above which has been engineered to contain at least one stem loop flanking each end of the antisense nucleic acid. In some embodiments, the at least one stem-loop structure formed at the 5' end of the stabilized antisense nucleic acid comprises a flush, double stranded 5' end. In some embodiments, one or more of the stem loops comprises a rho independent

terminator. In additional embodiments, the stabilized antisense RNA lacks a ribosome binding site. In further embodiments, the stabilized RNA lacks sites which are cleaved by one or more RNAses, such as RNase E or RNase III. In some embodiments, the stabilized antisense RNA may be transcribed in a cell which the activity of at least one enzyme involved in RNA degradation has been reduced. For example, the activity of an enzyme such as RNase E, RNase II, RNase III, polynucleotide phosphorylase, and poly(A) polymerase, RNA helicase, enolase or an enzyme having similar functions may be reduced in the cell.

Alternatively, genes required for proliferation may be identified by replacing the natural promoter for the proliferation required gene with a regulatable promoter as described above. The growth of such strains under conditions in which the promoter is active or non-repressed is compared to the growth under conditions in which the promoter is inactive or repressed. If the strains fail to grow or grow at a substantially reduced rate under conditions in which the promoter is inactive or repressed but grow normally under conditions in which the promoter is active or non-repressed, then the gene which is operably linked to the regulatable promoter encodes a gene product required for proliferation. For example, proliferation-required genes and gene products identified using promoter replacement are described in U.S. Patent Application Serial Number 09/948,993.

For example, in some embodiments, the natural promoter may be replaced using techniques which employ homologous recombination to exchange a promoter present on the chromosome of the cell with the desired promoter. In such methodology, a nucleic acid comprising a promoter replacement cassette is introduced into the cell. As illustrated in Figure 1A, the promoter replacement cassette comprises a 5' region homologous to the sequence which is 5' of the natural promoter in the chromosome, the promoter which is to replace the chromosomal promoter and a 3' region which is homologous to sequences 3' of the natural promoter in the chromosome. In some embodiments, the promoter replacement cassette may also include a nucleic acid encoding an identifiable or selectable marker disposed between the 5' region which is homologous to the sequence 5' of the natural promoter and the promoter which is to replace the chromosomal promoter. If desired, the promoter replacement cassette may also contain a transcriptional terminator 3' of the gene encoding an identifiable or selectable marker, as illustrated in Figure 1B. As illustrated in Figure 1A and 1B, homologous recombination is allowed to occur between the chromosomal region containing the natural promoter and the promoter replacement cassette. Cells in which the promoter replacement cassette has integrated into the chromosome are identified or selected. To confirm that homologous recombination has occurred, the chromosomal structure of the cells may be verified by Southern analysis or PCR.

In some embodiments, the promoter replacement cassette may be introduced into the cell as a linear nucleic acid, such a PCR product or a restriction fragment. Alternatively, the promoter replacement may be introduced into the cell on a plasmid. Figures 1A and 1B illustrates the

replacement of a chromosomal promoter with a desired promoter through homologous recombination.

In some embodiments, the cell into which the promoter replacement cassette is introduced may carry mutations which enhance its ability to be transformed with linear DNA or which enhance the frequency of homologous recombination. For example, if the cell is an *Escherichia coli* cell it may have a mutation in the gene encoding Exonuclease V of the RecBCD recombination complex. If the cell is an *Escherichia coli* cell it may have a mutation that activates the RecET recombinase of the λ phage and/or a mutation that enhances recombination through the RecF pathway. For example, the *Escherichia coli* cells may be RecB or RecC mutants carrying an *sbxA* or *sbxB* mutation. Alternatively, the *Escherichia coli* cells may be *recD* mutants. In other embodiments the *Escherichia coli* cells may express the λ Red recombination genes. For example, *Escherichia coli* cells suitable for use in techniques employing homologous recombination have been described in Datsenko, K.A. and Wanner, B.L., PNAS 97:6640-6645 (2000); Murphy, K.C., J. Bact 180: 2053-2071 (1998); Zhang, Y., et al., Nature Genetics 20: 123-128 (1998); and Muirers, J.P.P. et al., Genes & Development 14: 1971-1982 (2000). It will be appreciated that cells carrying mutations in similar genes may be constructed in organisms other than *Escherichia coli*.

In some embodiments of the present invention, a regulatable fusion promoter selected from a suite of fusion promoters, wherein the promoter suite is useful for modulating both the basal and maximal levels of transcription of a nucleic acid over a wide dynamic range thus allowing the desired level of production of a transcript, is with the promoter replacement methods described above. Such promoters are described in U.S. Patent Application Serial Number 10/032,393, filed December 21, 2001, the disclosure of which is incorporated herein by reference in its entirety.

A variety of assays are contemplated to identify nucleic acid sequences that negatively impact growth upon expression. In one embodiment, growth in cultures expressing exogenous nucleic acid sequences and growth in cultures not expressing these sequences is compared. Growth measurements are assayed by examining the extent of growth by measuring optical densities. Alternatively, enzymatic assays can be used to measure bacterial growth rates to identify exogenous nucleic acid sequences of interest. Colony size, colony morphology, and cell morphology are additional factors used to evaluate growth of the host cells. Those cultures that fail to grow or grow at a reduced rate under expression conditions are identified as containing an expression vector encoding a nucleic acid fragment that negatively affects a proliferation-required gene.

Once exogenous nucleic acids of interest are identified, they are analyzed. The first step of the analysis is to acquire the nucleotide sequence of the nucleic acid fragment of interest. To achieve this end, the insert in those expression vectors identified as containing a nucleotide sequence of interest is sequenced, using standard techniques well known in the art. The next step of the process is to determine the source of the nucleotide sequence. As used herein "source" means the genomic region containing the cloned fragment.

Determination of the gene(s) corresponding to the nucleotide sequence is achieved by comparing the obtained sequence data with databases containing known protein and nucleotide sequences from various microorganisms. Thus, initial gene identification is made on the basis of significant sequence similarity or identity to either characterized or predicted *Escherichia coli*,
 5 *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Salmonella typhimurium* genes or their encoded proteins and/or homologues in other species.

The number of nucleotide and protein sequences available in database systems has been growing exponentially for years. For example, the complete nucleotide sequences of *Caenorhabditis elegans* and several bacterial genomes, including *E. coli*, *Aeropyrum pernix*, *Aquifex aeolicus*,
 10 *Archaeoglobus fulgidus*, *Bacillus subtilis*, *Borrelia burgdorferi*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium tetani*, *Corynebacterium diphtheria*, *Deinococcus radiodurans*, *Haemophilus influenzae*, *Helicobacter pylori* 26695, *Helicobacter pylori* J99, *Methanobacterium thermoautotrophicum*, *Methanococcus jannaschii*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Pseudomonas aeruginosa*, *Pyrococcus abyssi*, *Pyrococcus horikoshii*, *Rickettsia prowazekii*, *Synechocystis PCC6803*, *Thermotoga maritima*, *Treponema pallidum*, *Bordetella pertussis*, *Campylobacter jejuni*, *Clostridium acetobutylicum*, *Mycobacterium tuberculosis* CSU#93, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pseudomonas aeruginosa*,
 15 *Pyrobaculum aerophilum*, *Pyrococcus furiosus*, *Rhodobacter capsulatus*, *Salmonella typhimurium*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Ureaplasma urealyticum* and *Vibrio cholera* are available. This nucleotide sequence information is stored in a number of databanks, such as GenBank, the National Center for Biotechnology Information (NCBI), the Genome Sequencing Center (<http://genome.wustl.edu/gsc/salmonella.shtml>), and the Sanger Centre (http://www.sanger.ac.uk/projects/S_typhi) which are publicly available for searching. A variety of computer programs are available to assist in the analysis of the sequences stored within these
 25 databases. FASTA, (W. R. Pearson (1990) "Rapid and Sensitive Sequence Comparison with FASTP and FASTA" Methods in Enzymology 183:63- 98), Sequence Retrieval System (SRS), (Etzold & Argos, SRS an indexing and retrieval tool for flat file data libraries. Comput. Appl. Biosci. 9:49-57, 1993) are two examples of computer programs that can be used to analyze sequences of interest. In one embodiment of the present invention, the BLAST family of computer
 30 programs, which includes BLASTN version 2.0 with the default parameters, or BLASTX version 2.0 with the default parameters, is used to analyze nucleotide sequences.

BLAST, an acronym for "Basic Local Alignment Search Tool," is a family of programs for database similarity searching. The BLAST family of programs includes: BLASTN, a nucleotide sequence database searching program, BLASTX, a protein database searching program where the input
 35 is a nucleic acid sequence; and BLASTP, a protein database searching program. BLAST programs embody a fast algorithm for sequence matching, rigorous statistical methods for judging the significance of matches, and various options for tailoring the program for special situations. Assistance

in using the program can be obtained by e-mail at blast@ncbi.nlm.nih.gov. tBLASTX can be used to translate a nucleotide sequence in all three potential reading frames into an amino acid sequence.

Bacterial genes are often transcribed in polycistronic groups. These groups comprise operons, which are a collection of genes and intergenic sequences under common regulation. The genes of an operon are transcribed on the same mRNA and are often related functionally. Given the nature of the screening protocol, it is possible that the identified exogenous nucleic acid corresponds to a gene or portion thereof with or without adjacent noncoding sequences, an intragenic sequence (i.e. a sequence within a gene), an intergenic sequence (i.e. a sequence between genes), a nucleotide sequence spanning at least a portion of two or more genes, a 5' noncoding region or a 3' noncoding region located upstream or downstream from the actual nucleotide sequence that is required for bacterial proliferation. Accordingly, it is often desirable to determine which gene(s) that is encoded within the operon is individually required for proliferation.

In one embodiment of the present invention, an operon is identified and then dissected to determine which gene or genes are required for proliferation. Operons can be identified by a variety of means known to those in the art. For example, the RegulonDB DataBase described by Huerta et al. (*Nucl. Acids Res.* 26:55-59, 1998), which may also be found on the website http://www.cifn.unam.mx/Computational_Biology/regulondb/, provides information about operons in *Escherichia coli*. The Subtilist database (<http://bioweb.pasteur.fr/GenoList/Subtilist>), (Moszer, I., Glaser, P. and Danchin, A. (1995) *Microbiology* 141: 261-268 and Moszer, I (1998) *FEBS Letters* 430: 28-36, may also be used to predict operons. This database lists genes from the fully sequenced, Gram positive bacteria, *Bacillus subtilis*, together with predicted promoters and terminator sites. This information can be used in conjunction with the *Staphylococcus aureus* genomic sequence data to predict operons and thus produce a list of the genes affected by the antisense nucleic acids of the present invention. The *Pseudomonas aeruginosa* web site (<http://www.pseudomonas.com>) can be used to help predict operon organization in this bacterium. The databases available from the Genome Sequencing Center (<http://genome.wustl.edu/gsc/salmonella.shtml>), and the Sanger Centre (http://www.sanger.ac.uk/projects/S_typhi) may be used to predict operons in *Salmonella typhimurium*. The TIGR microbial database has an incomplete version of the *E. faecalis* genome http://www.tigr.org/cgi-bin/BlastSearch/blast.cgi?organism=e_faecalis. One can take a nucleotide sequence and BLAST it for homologs.

A number of techniques that are well known in the art can be used to dissect the operon. Analysis of RNA transcripts by Northern blot or primer extension techniques are commonly used to analyze operon transcripts. In one aspect of this embodiment, gene disruption by homologous recombination is used to individually inactivate the genes of an operon that is thought to contain a gene required for proliferation.

Several gene disruption techniques have been described for the replacement of a functional gene with a mutated, non-functional (null) allele. These techniques generally involve the use of

homologous recombination. One technique using homologous recombination in *Staphylococcus aureus* is described in Xia et al. 1999, Plasmid 42: 144-149. This technique uses crossover PCR to create a null allele with an in-frame deletion of the coding region of a target gene. The null allele is constructed in such a way that nucleotide sequences adjacent to the wild type gene are retained.

- 5 These homologous sequences surrounding the deletion null allele provide targets for homologous recombination so that the wild type gene on the *Staphylococcus aureus* chromosome can be replaced by the constructed null allele. This method can be used with other bacteria as well, including *Salmonella* and *Klebsiella* species. Similar gene disruption methods that employ the counter selectable marker *sacB* (Schweizer, H. P., Klassen, T. and Hoang, T. (1996) Mol. Biol. of
- 10 *Pseudomonas*. ASM press, 229-237, are available for *Pseudomonas*, *Salmonella* and *Klebsiella* species. *E. faecalis* genes can be disrupted by recombining in a non-replicating plasmid that contains an internal fragment to that gene (Leboeuf, C., L. Leblanc, Y. Auffray and A. Hartke. 2000. J. Bacteriol. 182:5799-5806.

- The crossover PCR amplification product is subcloned into a suitable vector having a
- 15 selectable marker, such as a drug resistance marker. In some embodiments the vector may have an origin of replication which is functional in *E. coli* or another organism distinct from the organism in which homologous recombination is to occur, allowing the plasmid to be grown in *E. coli* or the organism other than that in which homologous recombination is to occur, but may lack an origin of replication functional in *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella*
- 20 *pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*,
- 25 *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus*
- 30 *epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* such that selection of the selectable marker requires integration of the vector into the homologous region of the *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter*
- 35 *baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus*

faecium, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* chromosome. Usually a single crossover event is responsible for this integration event such that the *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* chromosome now contains a tandem duplication of the target gene consisting of one wild type allele and one deletion null allele separated by vector sequence. Subsequent resolution of the duplication results in both removal of the vector sequence and either restoration of the wild type gene or replacement by the in-frame deletion. The latter outcome will not occur if the gene should prove essential. A more detailed description of this method is provided in Example 10 below. It will be appreciated that this method may be practiced with any of the nucleic acids or organisms described herein.

Recombinant DNA techniques can be used to express the entire coding sequences of the gene identified as required for proliferation, or portions thereof. The over-expressed proteins can be used as reagents for further study. The identified exogenous sequences are isolated, purified, and cloned into a suitable expression vector using methods well known in the art. If desired, the nucleic acids can contain the nucleotide sequences encoding a signal peptide to facilitate secretion of the expressed protein.

Expression of fragments of the bacterial genes identified as required for proliferation is also contemplated by the present invention. The fragments of the identified genes can encode a polypeptide comprising at least 5, at least 10, at least 15, at least 20, at least 25, at least 30, at least 35, at least 40, at least 45, at least 50, at least 55, at least 60, at least 65, at least 75, or more than 75 consecutive amino

acids of a gene complementary to one of the identified sequences of the present invention. The nucleic acids inserted into the expression vectors can also contain endogenous sequences upstream and downstream of the coding sequence.

When expressing the encoded protein of the identified nucleic acid required for bacterial proliferation or a fragment thereof, the nucleic acid to be expressed is operably linked to a promoter in an expression vector using conventional cloning technology. The expression vector can be any of the bacterial, insect, yeast, or mammalian expression systems known in the art. Commercially available vectors and expression systems are available from a variety of suppliers including Genetics Institute (Cambridge, MA), Stratagene (La Jolla, California), Promega (Madison, Wisconsin), and Invitrogen (San Diego, California). If desired, to enhance expression and facilitate proper protein folding, the codon usage and codon bias of the sequence can be optimized for the particular expression organism in which the expression vector is introduced, as explained by Hatfield, et al., U.S. Patent No. 5,082,767, incorporated herein by this reference. Fusion protein expression systems are also contemplated by the present invention.

Following expression of the protein encoded by the identified exogenous nucleic acid, the protein may be purified. Protein purification techniques are well known in the art. Proteins encoded and expressed from identified exogenous nucleic acids can be partially purified using precipitation techniques, such as precipitation with polyethylene glycol. Alternatively, epitope tagging of the protein can be used to allow simple one step purification of the protein. In addition, chromatographic methods such as ion-exchange chromatography, gel filtration, use of hydroxyapatite columns, immobilized reactive dyes, chromatofocusing, and use of high-performance liquid chromatography, may also be used to purify the protein. Electrophoretic methods such as one-dimensional gel electrophoresis, high-resolution two-dimensional polyacrylamide electrophoresis, isoelectric focusing, and others are contemplated as purification methods. Also, affinity chromatographic methods, comprising antibody columns, ligand presenting columns and other affinity chromatographic matrices are contemplated as purification methods in the present invention.

The purified proteins produced from the gene encoding sequences identified as required for proliferation can be used in a variety of protocols to generate useful antimicrobial reagents. In one embodiment of the present invention, antibodies are generated against the proteins expressed from the identified exogenous nucleic acids. Both monoclonal and polyclonal antibodies can be generated against the expressed proteins. Methods for generating monoclonal and polyclonal antibodies are well known in the art. Also, antibody fragment preparations prepared from the produced antibodies discussed above are contemplated.

In addition, the purified protein, fragments thereof, or derivatives thereof may be administered to an individual in a pharmaceutically acceptable carrier to induce an immune response against the protein. Preferably, the immune response is a protective immune response which protects the individual. Methods for determining appropriate dosages of the protein and pharmaceutically acceptable carriers may be determined empirically and are familiar to those skilled in the art.

Another application for the purified proteins of the present invention is to screen small molecule libraries for candidate compounds active against the various target proteins of the present invention. Advances in the field of combinatorial chemistry provide methods, well known in the art, to produce large numbers of candidate compounds that can have a binding, or otherwise inhibitory effect on a target protein. Accordingly, the screening of small molecule libraries for compounds with binding affinity or inhibitory activity for a target protein produced from an identified gene is contemplated by the present invention.

In some embodiments of the present invention, a cell sensitized by expressing an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, an antisense nucleic acid comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a nucleic acid complementary to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a nucleic acid complementary to a nucleic acid comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a nucleic acid complementary to a nucleic acid which encodes a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a nucleic acid complementary to a nucleic acid which encodes at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids of a polypeptide sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a homologous antisense nucleic acid, an antisense nucleic acid comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of a homologous nucleic acid, a nucleic acid complementary to a homologous coding nucleic acid, a nucleic acid complementary to at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of a homologous coding nucleic acid, a nucleic acid complementary to a nucleic acid which encodes a homologous polypeptide, or a nucleic acid complementary to a nucleic acid which encodes at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids of a homologous polypeptide, is contacted with one or more candidate compounds from a small molecule library. Candidate compounds which further inhibit the proliferation of the sensitized cell may be identified as possessing inhibitory activity for a target protein or product produced by the gene to which the antisense sequence is complementary.

A number of vectors useful in the above methods are described in U.S. Patent Application Serial Number 10/032,393, filed December 21, 2001.

In some embodiments of the present invention, the methods for the production of stabilized RNA, as described in U.S. Patent Application Serial Number 60/343,512, can be used for the production of a stabilized transcript, which corresponds to a nucleic acid described herein, having an increased lifetime in Gram-negative organisms. Briefly, the stabilized antisense RNA may comprise an antisense RNA which was identified as inhibiting proliferation as described above

which has been engineered to contain at least one stem loop flanking each end of the antisense nucleic acid. In some embodiments, the at least one stem-loop structure formed at the 5' end of the stabilized antisense nucleic acid comprises a flush, double stranded 5' end. In some embodiments, one or more of the stem loops comprises a rho independent terminator. In additional embodiments, the stabilized antisense RNA lacks a ribosome binding site. In further embodiments, the stabilized RNA lacks sites which are cleaved by one or more RNases, such as RNase E or RNase III. In some embodiments, the stabilized antisense RNA may be transcribed in a cell which the activity of at least one enzyme involved in RNA degradation has been reduced. For example, the activity of an enzyme such as RNase E, RNase II, RNase III, polynucleotide phosphorylase, and poly(A) polymerase, RNA helicase, enolase or an enzyme having similar functions may be reduced in the cell.

The present invention further contemplates utility against a variety of other pathogenic microorganisms in addition to *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* and *Yersinia pestis*. For example, homologous coding nucleic acids, homologous antisense nucleic acids or homologous polypeptides from other pathogenic microorganisms (including nucleic acids homologous to the nucleic acids of SEQ ID NOs.: 6214-42397, nucleic acids homologous to the antisense nucleic acids of SEQ ID NOs.: 1-6213, and polypeptides homologous to the polypeptides of SEQ ID NOs.: 42398-78581) may be identified using methods such as those described herein. The homologous coding nucleic acids, homologous antisense nucleic acids or homologous polypeptides may be used to identify compounds which inhibit the proliferation of these other pathogenic microorganisms using methods such as those described herein.

For example, the proliferation-required nucleic acids, antisense nucleic acids, and polypeptides from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia*

pneumoniae, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*,
5 *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or
10 *Yersinia pestis* described herein (including the nucleic acids of SEQ ID NOs.: 6214-42397, the antisense nucleic acids of SEQ ID NOs.: 1-6213, and the polypeptides of SEQ ID NOs.: 42398-78581) may be used to identify homologous coding nucleic acids, homologous antisense nucleic acids or homologous polypeptides required for proliferation in prokaryotes and eukaryotes. For example, nucleic acids or polypeptides required for the proliferation of protists, such as *Plasmodium* spp.;
15 plants; animals, such as *Entamoeba* spp. and *Contracaecum* spp.; and fungi including *Candida* spp., (e.g., *Candida albicans*), *Cryptococcus neoformans*, and *Aspergillus fumigatus* may be identified. In one embodiment of the present invention, monera, specifically bacteria, including both Gram positive and Gram negative bacteria, are probed in search of novel gene sequences required for proliferation. Likewise, homologous antisense nucleic acids which may be used to inhibit growth of these organisms.
20 or to identify antibiotics may also be identified. These embodiments are particularly important given the rise of drug resistant bacteria.

The number of bacterial species that are becoming resistant to existing antibiotics is growing. A partial list of these microorganisms includes: *Escherichia* spp., such as *E. coli*, *Enterococcus* spp., such as *E. faecalis*; *Pseudomonas* spp., such as *P. aeruginosa*, *Clostridium* spp., such as *C.*
25 *botulinum*, *Haemophilus* spp., such as *H. influenzae*, *Enterobacter* spp., such as *E. cloacae*, *Vibrio* spp., such as *V. cholera*; *Moraxella* spp., such as *M. catarrhalis*; *Streptococcus* spp., such as *S. pneumoniae*, *Neisseria* spp., such as *N. gonorrhoeae*; *Mycoplasma* spp., such as *Mycoplasma pneumoniae*; *Salmonella typhimurium*; *Helicobacter pylori*; *Escherichia coli*; and *Mycobacterium tuberculosis*. The genes and polypeptides identified as required for the proliferation of *Escherichia*
30 *coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium*
35 *diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella*

multocida, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*,
Salmonella typhi, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus*
mutans, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma*
urealyticum, *Vibrio cholerae* or *Yersinia pestis* (including the nucleic acids of SEQ ID NOs.: 6214-
5 42397, the sequences complementary to the nucleic acids of SEQ ID NOs.: 6214-42397, and the
polypeptides of SEQ ID NOs.: 42398-78581) can be used to identify homologous coding nucleic
acids or homologous polypeptides required for proliferation from these and other organisms using
methods such as nucleic acid hybridization and computer database analysis. Likewise, the
antisense nucleic acids which inhibit proliferation of *Escherichia coli*, *Staphylococcus aureus*,
10 *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*,
Acinetobacter baumannii, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia*
burgdorferi, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter*
jejuni, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium*
botulinum, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus*
15 *faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria*
monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
pneumoniae, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus*
mirabilis, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*,
20 *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus*
pneumoniae, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio*
cholerae or *Yersinia pestis* (including the antisense nucleic acids of SEQ ID NOs.: 1-6213 or the
sequences complementary thereto) may also be used to identify antisense nucleic acids which
inhibit proliferation of these and other microorganisms or cells using nucleic acid hybridization or
25 computer database analysis.

In one embodiment of the present invention, the nucleic acid sequences from *Escherichia coli*,
Staphylococcus aureus, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*,
Salmonella typhimurium, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*,
Bordetella pertussis, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*,
30 *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*,
Clostridium acetobutylicum, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium*
diphtheriae, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter*
pylori, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium*
avium, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma*
35 *genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella*
multocida, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*,
Salmonella typhi, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus*
mutans, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma*

urealyticum, *Vibrio cholerae* or *Yersinia pestis* (including the nucleic acids of SEQ ID NOs.: 6214-42397 and the antisense nucleic acids of SEQ ID NOs. 1-6213) are used to screen genomic libraries generated from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*,
 5 *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*,
 10 *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*,
 15 *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Yersinia pestis* and other bacterial species of interest. For example, the genomic library may be from Gram positive bacteria, Gram negative bacteria or other organisms including *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*,
 20 *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*,
 25 *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*,
 30 *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species, including coagulase negative species of *Staphylococcus*. In some embodiments, the genomic

library may be from an organism other than *E. coli*. Standard molecular biology techniques are used to generate genomic libraries from various cells or microorganisms. In one aspect, the libraries are generated and bound to nitrocellulose paper. The identified exogenous nucleic acid sequences of the present invention can then be used as probes to screen the libraries for homologous sequences.

5 For example, the libraries may be screened to identify homologous coding nucleic acids or homologous antisense nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213, nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500
10 consecutive nucleotides of one of SEQ ID NOs. 1-6213, nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a nucleic acid complementary to one of SEQ ID NOs. 1-6213, nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of the sequence complementary to one of SEQ ID NOs. 1-
15 6213, nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a nucleic acid selected from the group consisting of SEQ ID NOS.: 6214-42397, nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of one of SEQ ID NOS.: 6214-42397, nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a nucleic acid complementary to one of SEQ ID
20 NOS.: 6214-42397, nucleic acids comprising nucleotide sequences which hybridize under stringent conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of the sequence complementary to one of SEQ ID NOS.: 6214-42397.

25 The libraries may also be screened to identify homologous nucleic coding nucleic acids or homologous antisense nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213, nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500
30 consecutive nucleotides of one of SEQ ID NOs. 1-6213, nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a nucleic acid complementary to one of SEQ ID NOs. 1-6213, nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of the sequence complementary to one of SEQ ID
35 NOs. 1-6213, nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a nucleic acid selected from the group consisting of SEQ ID NOS.: 6214-42397, nucleic acids comprising nucleic acid sequences which hybridize under moderate conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500

consecutive nucleotides of one of SEQ ID NOS.: 6214-42397, nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a nucleic acid complementary to one of SEQ ID NOS.: 6214-42397 and nucleic acids comprising nucleotide sequences which hybridize under moderate conditions to a fragment comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100,
5 150, 200, 300, 400, or 500 consecutive nucleotides of the sequence complementary to one of SEQ ID NOS.: 6214-42397.

The homologous coding nucleic acids, homologous antisense nucleic acids or homologous polypeptides identified as above can then be used as targets or tools for the identification of new, antimicrobial compounds using methods such as those described herein. In some embodiments, the
10 homologous coding nucleic acids, homologous antisense nucleic acids, or homologous polypeptides may be used to identify compounds with activity against more than one microorganism. [Placeholder]

For example, the preceding methods may be used to isolate homologous coding nucleic acids or homologous antisense nucleic acids comprising a nucleotide sequence with at least 97%, at least 95%, at least 90%, at least 85%, at least 80%, or at least 70% nucleotide sequence identity to a
15 nucleotide sequence selected from the group consisting of one of the sequences of SEQ ID NOS. 1-6213, fragments comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides thereof, and the sequences complementary thereto. The preceding methods may also be used to isolate homologous coding nucleic acids or homologous antisense nucleic acids comprising a nucleotide sequence with at least 97%, at least 95%, at least 90%, at least 85%, at
20 least 80%, or at least 70% nucleotide sequence identity to a nucleotide sequence selected from the group consisting of one of the nucleotide sequences of SEQ ID NOS.: 6214-42397, fragments comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides thereof, and the sequences complementary thereto. Identity may be measured using
25 BLASTN version 2.0 with the default parameters. (Altschul, S.F. et al. Gapped BLAST and PSI-BLAST: A New Generation of Protein Database Search Programs, Nucleic Acid Res. 25: 3389-3402 (1997). For example, the homologous polynucleotides may comprise a coding sequence which is a naturally occurring allelic variant of one of the coding sequences described herein. Such allelic variants may have a substitution, deletion or addition of one or more nucleotides when compared to the nucleic acids of SEQ ID NOS.: 1-6213, SEQ ID NOS.: 6214-42397 or the
30 nucleotide sequences complementary thereto.

Additionally, the above procedures may be used to isolate homologous coding nucleic acids which encode polypeptides having at least 99%, 95%, at least 90%, at least 85%, at least 80%, at least 70%, at least 60%, at least 50%, at least 40% or at least 25% amino acid identity or similarity to a polypeptide comprising the sequence of one of SEQ ID NOS.: 42398-78581 or to a polypeptide
35 whose expression is inhibited by a nucleic acid of one of SEQ ID NOS.: 1-6213 or fragments comprising at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids thereof as determined using the FASTA version 3.0t78 algorithm with the default parameters. Alternatively, protein identity or similarity may be identified using BLASTP with the default

parameters, BLASTX with the default parameters, or TBLASTN with the default parameters. (Altschul, S.F. et al. Gapped BLAST and PSI-BLAST: A New Generation of Protein Database Search Programs, Nucleic Acid Res. 25: 3389-3402 (1997).

Alternatively, homologous coding nucleic acids, homologous antisense nucleic acids or homologous polypeptides may be identified by searching a database to identify sequences having a desired level of nucleotide or amino acid sequence homology to a nucleic acid or polypeptide involved in proliferation or an antisense nucleic acid to a nucleic acid involved in microbial proliferation. A variety of such databases are available to those skilled in the art, including GenBank and GenSeq. In some embodiments, the databases are screened to identify nucleic acids with at least 97%, at least 95%, at least 90%, at least 85%, at least 80%, or at least 70% nucleotide sequence identity to a nucleic acid required for proliferation, an antisense nucleic acid which inhibits proliferation, or a portion of a nucleic acid required for proliferation or a portion of an antisense nucleic acid which inhibits proliferation. For example, homologous coding sequences may be identified by using a database to identify nucleic acids homologous to one of SEQ ID Nos. 1-6213, homologous to fragments comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides thereof, nucleic acids homologous to one of SEQ ID NOS.: 6214-42397, homologous to fragments comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of one of SEQ ID NOS.: 6214-42397, nucleic acids homologous to one of SEQ ID Nos. 1-6213, homologous to fragments comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides thereof or nucleic acids homologous to the sequences complementary to any of the preceding nucleic acids. In other embodiments, the databases are screened to identify polypeptides having at least 99%, 95%, at least 90%, at least 85%, at least 80%, at least 70%, at least 60%, at least 50%, at least 40% or at least 25% amino acid sequence identity or similarity to a polypeptide involved in proliferation or a portion thereof. For example, the database may be screened to identify polypeptides homologous to a polypeptide comprising one of SEQ ID NOs: 42398-78581, a polypeptide whose expression is inhibited by a nucleic acid of one of SEQ ID NOs: 1-6213 or homologous to fragments comprising at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids of any of the preceding polypeptides. In some embodiments, the database may be screened to identify homologous coding nucleic acids, homologous antisense nucleic acids or homologous polypeptides from cells or microorganisms other than the *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,

Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* species from which they were obtained. For example the database may be screened to identify homologous coding nucleic acids, homologous antisense nucleic acids or homologous polypeptides from microorganisms such as *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species, including coagulase negative *Staphylococcus*. In some embodiments, the homologous coding nucleic acids, homologous antisense nucleic acids, or homologous polypeptides are from an organism other than *E. coli*.

In another embodiment, gene expression arrays and microarrays can be employed. Gene expression arrays are high density arrays of DNA samples deposited at specific locations on a glass chip, nylon membrane, or the like. Such arrays can be used by researchers to quantify relative gene expression under different conditions. Gene expression arrays are used by researchers to help identify optimal drug targets, profile new compounds, and determine disease pathways. An example of this technology is found in U.S. Patent No. 5,807,522.

It is possible to study the expression of all genes in the genome of a particular microbial organism using a single array. For example, the arrays may consist of 12 x 24 cm nylon filters containing PCR products corresponding to ORFs from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*,
 5 *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria*
 10 *monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus*
 15 *pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* (including the nucleic acids of SEQ ID NOs.: 6214-42397). 10 ngs of each PCR product are spotted every 1.5 mm on the filter. Single stranded labeled cDNAs are prepared for hybridization to the array (no second strand synthesis or amplification step is done) and placed in contact with the filter. Thus the labeled cDNAs are of "antisense" orientation.
 20 Quantitative analysis is done by phosphorimager.

Hybridization of cDNA made from a sample of total cell mRNA to such an array followed by detection of binding by one or more of various techniques known to those in the art results in a signal at each location on the array to which cDNA hybridized. The intensity of the hybridization signal obtained at each location in the array thus reflects the amount of mRNA for that specific
 25 gene that was present in the sample. Comparing the results obtained for mRNA isolated from cells grown under different conditions thus allows for a comparison of the relative amount of expression of each individual gene during growth under the different conditions.

Gene expression arrays may be used to analyze the total mRNA expression pattern at various time points after induction of an antisense nucleic acid complementary to a proliferation-
 30 required gene. Analysis of the expression pattern indicated by hybridization to the array provides information on other genes whose expression is influenced by antisense expression. For example, if the antisense is complementary to a gene for ribosomal protein L7/L12 in the 50S subunit, levels of other mRNAs may be observed to increase, decrease or stay the same following expression of antisense to the L7/L12 gene. If the antisense is complementary to a different 50S subunit
 35 ribosomal protein mRNA (e.g. L25), a different mRNA expression pattern may result. Thus, the mRNA expression pattern observed following expression of an antisense nucleic acid comprising a nucleotide sequence complementary to a proliferation required gene may identify other proliferation-required nucleic acids. In addition, the mRNA expression patterns observed when the

bacteria are exposed to candidate drug compounds or known antibiotics may be compared to those observed with antisense nucleic acids comprising a nucleotide sequence complementary to a proliferation-required nucleic acid. If the mRNA expression pattern observed with the candidate drug compound is similar to that observed with the antisense nucleic acid, the drug compound may be a promising therapeutic candidate. Thus, the assay would be useful in assisting in the selection of promising candidate drug compounds for use in drug development.

In cases where the source of nucleic acid deposited on the array and the source of the nucleic acid being hybridized to the array are from two different cells or microorganisms, gene expression arrays can identify homologous nucleic acids in the two cells or microorganisms.

The present invention also contemplates additional methods for screening other microorganisms for proliferation-required genes. In one aspect of this embodiment, an antisense nucleic acid comprising a nucleotide sequence complementary to the proliferation-required sequences from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis*, or a portion thereof, is transcribed in an antisense orientation in such a way as to alter the level or activity of a nucleic acid required for proliferation of an autologous or heterologous cell or microorganism. For example, the antisense nucleic acid may be a homologous antisense nucleic acid such as an antisense nucleic acid homologous to the nucleotide sequence complementary to one of SEQ ID NOs.: 6214-42397, an antisense nucleic acid comprising a nucleotide sequence homologous to one of SEQ ID Nos.: 1-6213, or an antisense nucleic acid comprising a nucleotide sequence complementary to a portion of any of the preceding nucleic acids. The cell or microorganism transcribing the homologous antisense nucleic acid may be used in a cell-based assay, such as those described herein, to identify candidate antibiotic compounds. In another embodiment, the conserved portions of nucleotide sequences identified as proliferation-required can be used to generate degenerate primers for use in the polymerase chain reaction (PCR). The PCR technique is well known in the art. The successful production of a PCR product using degenerate primers generated from the nucleotide sequences identified herein indicates the presence of a homologous gene sequence in the species being screened.

This homologous gene is then isolated, expressed, and used as a target for candidate antibiotic compounds. In another aspect of this embodiment, the homologous gene (for example a homologous coding nucleic acid) thus identified, or a portion thereof, is transcribed in an autologous cell or microorganism or in a heterologous cell or microorganism in an antisense orientation in such a way as to alter the level or activity of a homologous gene required for proliferation in the autologous or heterologous cell or microorganism. Alternatively, a homologous antisense nucleic acid may be transcribed in an autologous or heterologous cell or microorganism in such a way as to alter the level or activity of a gene product required for proliferation in the autologous or heterologous cell or microorganism.

The nucleic acids homologous to the genes required for the proliferation of *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* or the sequences complementary thereto may be used to identify homologous coding nucleic acids or homologous antisense nucleic acids from cells or microorganisms other than *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* to inhibit the proliferation of cells or microorganisms other than

Escherichia coli, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*,
Pseudomonas aeruginosa, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*,
Bacteroides fragilis, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*,
Burkholderia fungorum, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*,
5 *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*,
Corynebacterium diphtheriae, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus*
influenzae, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella*
catarrhalis, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium*
tuberculosis, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria*
10 *meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas*
syringae, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus*
haemolyticus, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*,
Treponema pallidum, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* by inhibiting the
activity or reducing the amount of the identified homologous coding nucleic acid or homologous
15 polypeptide in the cell or microorganism other than *Escherichia coli*, *Staphylococcus aureus*,
Enterococcus faecalis, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*,
Acinetobacter baumannii, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia*
burgdorferi, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter*
jejuni, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium*
20 *botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus*
faecium, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria*
monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
pneumoniae, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus*
25 *mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*,
Staphylococcus epidermidis, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus*
pneumoniae, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio*
cholerae or *Yersinia pestis* or to identify compounds which inhibit the growth of cells or
microorganisms other than *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*,
30 *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter*
baumannii, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*,
Burkholderia cepacia, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*,
Chlamydia pneumoniae, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium*
botulinum, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus*
35 *faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria*
monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
pneumoniae, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus*

mirabilis, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*,
Staphylococcus epidermidis, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus*
pneumoniae, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio*
cholerae or *Yersinia pestis* as described below. For example, the nucleic acids homologous to
5 proliferation-required genes from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*,
Klebsiella pneumoniae, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter*
baumannii, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*,
Burkholderia cepacia, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*,
Chlamydia pneumoniae, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium*
10 *botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus*
faecium, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria*
monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
pneumoniae, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus*
15 *mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*,
Staphylococcus epidermidis, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus*
pneumoniae, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio*
cholerae or *Yersinia pestis* or the sequences complementary thereto may be used to identify
compounds which inhibit the growth of *Acinetobacter baumannii*, *Anaplasma marginale*,
20 *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia*
burgdorferi, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter*
jejuni, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*,
Candida parapsilosis, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida*
pseudotropicalis), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*,
25 *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*,
Coccidioides immitis, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter*
cloacae, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*,
Helicobacter pylori, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*,
Listeria monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
30 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
pneumoniae, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella*
haemolytica, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
Pseudomonas aeruginosa, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*,
Salmonella choleraesuis, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella*
35 *typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
Staphylococcus aureus, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus*
pneumoniae, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma*
urealyticum, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,

Yersinia pestis or any species falling within the genera of any of the above species. In some embodiments of the present invention, the nucleic acids homologous to proliferation-required sequences from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*,
 5 *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*,
 10 *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*,
 15 *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* (including nucleic acids homologous to one of SEQ ID NOs.: 6214-42397) or the sequences complementary thereto (including nucleic acids homologous to one of SEQ ID NOs.: 1-6213) are used to identify proliferation-required sequences in an organism other than *E. coli*.

In another embodiment of the present invention, antisense nucleic acids complementary to the
 20 sequences identified as required for proliferation or portions thereof (including antisense nucleic acids comprising a nucleotide sequence complementary to one of SEQ ID NOs.: 6214-42397 or portions thereof, such as the nucleic acids of SEQ ID NOs.: 1-6213) are transferred to vectors capable of function within a species other than the species from which the sequences were obtained. For example, the vector may be functional in *Acinetobacter baumannii*, *Anaplasma marginale*,
 25 *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*,
 30 *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
 35 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*,

Salmonella choleraesuis, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species. In some embodiments of the present invention, the vector may be functional in an organism other than *E. coli*. As would be appreciated by one of ordinary skill in the art, vectors may contain certain elements that are species specific. These elements can include promoter sequences, operator sequences, repressor genes, origins of replication, ribosomal binding sequences, termination sequences, and others. To use the antisense nucleic acids, one of ordinary skill in the art would know to use standard molecular biology techniques to isolate vectors containing the sequences of interest from cultured bacterial cells, isolate and purify those sequences, and subclone those sequences into a vector adapted for use in the species of bacteria to be screened.

Vectors for a variety of other species are known in the art. For example, numerous vectors which function in *E. coli* are known in the art. Also, Pla et al. have reported an expression vector that is functional in a number of relevant hosts including: *Salmonella typhimurium*, *Pseudomonas putida*, and *Pseudomonas aeruginosa*. *J. Bacteriol.* 172(8):4448-55 (1990). Brunschwig and Darzins (Gene (1992) 111:35-4, described a shuttle expression vector for *Pseudomonas aeruginosa*. Vectors useful for the production of stabilized mRNA having an increased lifetime (including antisense RNA) in Gram negative organisms are described in U.S. Provisional Patent Application Serial Number 60/343,512, filed December 21, 2001. Similarly many examples exist of expression vectors that are freely transferable among various Gram positive microorganisms. Expression vectors for *Enterococcus faecalis* may be engineered by incorporating suitable promoters into a pAK80 backbone (Israelsen, H., S. M. Madsen, A. Vrang, E. B. Hansen and E. Johansen. 1995. *Appl. Environ. Microbiol.* 61:2540-2547. A number of vectors useful for nucleic acid expression (including antisense nucleic acid expression) in *Enterococcus faecalis*, *Staphylococcus aureus* as well as other Gram positive organisms are described in U.S. Patent Application Serial Number 10/032,393, filed December 21, 2001.

Following the subcloning of the antisense nucleic acids complementary to proliferation-required sequences from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,

Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* or portions thereof into a vector functional in a second cell or microorganism of interest (i.e. a cell or microorganism other than the one from which the identified nucleic acids were obtained), the antisense nucleic acids are conditionally transcribed to test for bacterial growth inhibition. The nucleotide sequences of the nucleic acids from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* that, when transcribed, inhibit growth of the second cell or microorganism are compared to the known genomic sequence of the second cell or microorganism to identify the homologous gene from the second organism. If the homologous sequence from the second cell or microorganism is not known, it may be identified and isolated by hybridization to the proliferation-required *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio*

cholerae or *Yersinia pestis* sequence of interest or by amplification using PCR primers based on the proliferation-required nucleotide sequence of interest as described above. In this way, sequences which may be required for the proliferation of the second cell or microorganism may be identified. For example, the second microorganism may be *Acinetobacter baumannii*, *Anaplasma marginale*,
 5 *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*,
 10 *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
 15 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 20 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species. In some
 25 embodiments of the present invention, the second microorganism is an organism other than *E. coli*.

The homologous nucleic acid sequences from the second cell or microorganism which are identified as described above may then be operably linked to a promoter, such as an inducible promoter, in an antisense orientation and introduced into the second cell or microorganism. The techniques described herein for identifying *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus*
 30 *faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus*
 35 *faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus*

mirabilis, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*,
Staphylococcus epidermidis, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus*
pneumoniae, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio*
cholerae or *Yersinia pestis* genes required for proliferation may thus be employed to determine
5 whether the identified nucleotide sequences from a second cell or microorganism inhibit the
proliferation of the second cell or microorganism. For example, the second microorganism may be
Acinetobacter baumannii, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*,
Bacteroides fragilis, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*,
Burkholderia fungorum, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida*
10 *glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida*
guilliermondii, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida*
dubliniensis, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*,
Clostridium botulinum, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*,
Corynebacterium diphtheriae, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus*
15 *faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*,
Histoplasma capsulatum, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria*
monocytogenes, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
Mycobacterium leprae, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma*
pneumoniae, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella*
20 *haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
Pseudomonas aeruginosa, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*,
Salmonella choleraesuis, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella*
typhimurium, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
Staphylococcus aureus, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus*
25 *pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma*
urealyticum, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*,
Yersinia pestis or any species falling within the genera of any of the above species. In some
embodiments of the present invention, the second microorganism may be an organism other than *E.*
coli.

30 Antisense nucleic acids required for the proliferation of microorganisms other than
Escherichia coli, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*,
Pseudomonas aeruginosa, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*,
Bacteroides fragilis, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*,
Burkholderia fungorum, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*,
35 *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*,
Corynebacterium diphtheriae, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus*
influenzae, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella*
catarrhalis, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium*

tuberculosis, Mycoplasma genitalium, Mycoplasma pneumoniae, Neisseria gonorrhoeae, Neisseria meningitidis, Pasteurella multocida, Proteus mirabilis, Pseudomonas putida, Pseudomonas syringae, Salmonella paratyphi, Salmonella typhi, Staphylococcus epidermidis, Staphylococcus haemolyticus, Streptococcus mutans, Streptococcus pneumoniae, Streptococcus pyogenes,
5 *Treponema pallidum, Ureaplasma urealyticum, Vibrio cholerae or Yersinia pestis* or the genes corresponding thereto, may also be hybridized to a microarray containing the *Escherichia coli, Staphylococcus aureus, Enterococcus faecalis, Klebsiella pneumoniae, Pseudomonas aeruginosa, Salmonella typhimurium, Acinetobacter baumannii, Bacillus anthracis, Bacteroides fragilis, Bordetella pertussis, Borrelia burgdorferi, Burkholderia cepacia, Burkholderia fungorum,*
10 *Burkholderia mallei, Campylobacter jejuni, Chlamydia pneumoniae, Chlamydia trachomatis, Clostridium acetobutylicum, Clostridium botulinum, Clostridium difficile, Corynebacterium diphtheriae, Enterobacter cloacae, Enterococcus faecium, Haemophilus influenzae, Helicobacter pylori, Legionella pneumophila, Listeria monocytogenes, Moraxella catarrhalis, Mycobacterium avium, Mycobacterium bovis, Mycobacterium leprae, Mycobacterium tuberculosis, Mycoplasma genitalium, Mycoplasma pneumoniae, Neisseria gonorrhoeae, Neisseria meningitidis, Pasteurella multocida, Proteus mirabilis, Pseudomonas putida, Pseudomonas syringae, Salmonella paratyphi, Salmonella typhi, Staphylococcus epidermidis, Staphylococcus haemolyticus, Streptococcus mutans, Streptococcus pneumoniae, Streptococcus pyogenes, Treponema pallidum, Ureaplasma urealyticum, Vibrio cholerae or Yersinia pestis* (including the nucleic acids of SEQ ID NOS.: 6214-
20 42397) to gauge the homology between the *Escherichia coli, Staphylococcus aureus, Enterococcus faecalis, Klebsiella pneumoniae, Pseudomonas aeruginosa, Salmonella typhimurium, Acinetobacter baumannii, Bacillus anthracis, Bacteroides fragilis, Bordetella pertussis, Borrelia burgdorferi, Burkholderia cepacia, Burkholderia fungorum, Burkholderia mallei, Campylobacter jejuni, Chlamydia pneumoniae, Chlamydia trachomatis, Clostridium acetobutylicum, Clostridium botulinum, Clostridium difficile, Corynebacterium diphtheriae, Enterobacter cloacae, Enterococcus faecium, Haemophilus influenzae, Helicobacter pylori, Legionella pneumophila, Listeria monocytogenes, Moraxella catarrhalis, Mycobacterium avium, Mycobacterium bovis, Mycobacterium leprae, Mycobacterium tuberculosis, Mycoplasma genitalium, Mycoplasma pneumoniae, Neisseria gonorrhoeae, Neisseria meningitidis, Pasteurella multocida, Proteus mirabilis, Pseudomonas putida, Pseudomonas syringae, Salmonella paratyphi, Salmonella typhi, Staphylococcus epidermidis, Staphylococcus haemolyticus, Streptococcus mutans, Streptococcus pneumoniae, Streptococcus pyogenes, Treponema pallidum, Ureaplasma urealyticum, Vibrio cholerae or Yersinia pestis* sequences and the proliferation-required nucleic acids from other cells or microorganisms. For example, the proliferation-required nucleic acid may be from
35 *Acinetobacter baumannii, Anaplasma marginale, Aspergillus fumigatus, Bacillus anthracis, Bacteroides fragilis, Bordetella pertussis, Borrelia burgdorferi, Burkholderia cepacia, Burkholderia fungorum, Burkholderia mallei, Campylobacter jejuni, Candida albicans, Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis, Candida parapsilosis, Candida*

guilliermondii, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*,
 5 *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,
 10 *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species. In some embodiments of the present invention, the proliferation-required nucleotide sequences from
Escherichia coli, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*,
 20 *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*,
 25 *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* or homologous nucleic acids are used to identify proliferation-required sequences in an organism other than *E. coli*. In some embodiments of the present invention, the proliferation-required sequences may be from an organism other than *E. coli*. The proliferation-required nucleic acids from a cell or microorganism
 35 other than *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium*, *Acinetobacter baumannii*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Chlamydia pneumoniae*,

Chlamydia trachomatis, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Corynebacterium diphtheriae*, *Enterobacter cloacae*, *Enterococcus faecium*, *Haemophilus influenzae*, *Helicobacter pylori*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pasteurella multocida*, *Proteus mirabilis*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella paratyphi*, *Salmonella typhi*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus mutans*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae* or *Yersinia pestis* may be hybridized to the array under a variety of conditions which permit hybridization to occur when the probe has different levels of homology to the nucleotide sequence on the microarray. This would provide an indication of homology across the cells or microorganisms as well as clues to other possible essential genes in these cells or microorganisms.

In some embodiments of the present invention, the essential gene products described herein are used in methods of identifying a target on which a compound that inhibits cellular proliferation acts. Such methods are described in the U.S. Patent Application entitled METHODS FOR IDENTIFYING THE TARGET OF A COMPOUND WHICH INHIBITS CELLULAR PROLIFERATION, filed February 8, 2002. As employed herein, some embodiments of methods used to identify a target on which a compound that inhibits cellular proliferation acts utilize collections or cultures of strains comprising strains which either overexpress a different gene product which is required for cellular proliferation (such as the gene products described herein) or underexpress a different gene product (such as the gene products described herein) which is required for cellular proliferation (i.e. at least some of the strains in the culture overexpress or underexpress a gene product required for cellular proliferation). In some embodiments, the present invention uses collections or cultures of strains comprising both strains which overexpress gene products required for cellular proliferation and strains which underexpress the same gene products required for cellular proliferation. Preferably, each of the strains present in the culture or collection either overexpresses or underexpresses a different gene product which is required for cellular proliferation (i.e. all of the strains in the culture overexpress or underexpress a gene product required for cellular proliferation). However, in some embodiments, the culture or collection may include one or more strains which do not overexpress or underexpress a gene product which is required for proliferation. The gene product which is overexpressed or underexpressed in each strain may be any gene product which is required for cellular proliferation, including a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or level is inhibited by a homologous

antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, and a gene product comprising a homologous polypeptide.

As used herein the term "culture" refers to a plurality of strains growing in a single aliquot of a liquid growth medium and the term "collection" refers to a plurality of strains each of which is growing in a separate aliquot of liquid growth medium or a different location on a solid growth medium.

In some embodiments, if desired, one or more of the strains in the culture or collection of strains may overexpress or underexpress more than one gene product described herein which is required for cellular proliferation. In this embodiment, the gene products which are overexpressed or underexpressed in one or more of the strains may be functionally related or functionally unrelated. This may facilitate the identification of compounds when two or more gene products share similar functions in the cell or where the cell has multiple biochemical pathways which lead to a particular end product.

Alternatively, if the gene product described herein to be overexpressed or underexpressed is encoded by a gene which is part of an operon containing a plurality of genes, the desired gene may be overexpressed or underexpressed while the remaining genes in the operon are expressed at levels where they do not impact the ability of the cell to grow in the presence of a particular compound. For example, the desired gene may be placed under the control of a regulatable promoter, a transcriptional terminator may be placed 3' of the desired gene and a promoter, preferably a constitutive promoter, may be placed 3' of the transcriptional terminator and 5' of the remaining genes in the operon.

In some embodiments, the culture or collection of strains may comprise a strain which overexpresses or underexpresses a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 1-6213.

In some embodiments, the culture or collection of strains may comprise strains which in aggregate overexpress or underexpress at least two gene products whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213, at least 10 gene products whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213, at least 20 gene products whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213, at least 30 gene products whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213, at least 50 gene products whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213, at least 100 gene products whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213, at least 300 gene products whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213 or more than 300 gene products whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOS.: 1-6213, wherein each strain in the culture or collection of strains overexpresses or underexpresses a single gene

product whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs. 1-6213. Alternatively, if desired, one or more of the strains in the culture or collection of strains may overexpress or underexpress more than one gene product whose activity or level is inhibited by a nucleic acid selected from the group consisting of SEQ ID NOs. 1-6213.

5 In other embodiments, the culture or collection of strains may comprise a strain which overexpresses or underexpresses a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397. In some embodiments, the culture or collection of strains may comprise strains which in aggregate overexpress or underexpress at least two gene products encoded by a nucleic acid comprising a nucleotide
10 sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, at least 10 gene products encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, at least 20 gene products encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, at least 30 gene products encoded by a nucleic acid comprising a nucleotide sequence selected from
15 the group consisting of SEQ ID NOs.: 6214-42397, at least 50 gene products encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, at least 100 gene products encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, at least 300 gene products encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of
20 SEQ ID NOs.: 6214-42397 or more than 300 gene products encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, wherein each strain in the culture or collection of strains overexpresses or underexpresses a single gene product encoded by a nucleic acid selected from the group consisting of SEQ ID NOs. 6214-42397. Alternatively, if desired, one or more strains in the culture or collection of strains may overexpress
25 or underexpress more than one gene product encoded by a nucleic acid selected from the group consisting of SEQ ID NOs. 6214-42397.

In some embodiments the culture or collection of strains comprises a strain in which a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 is overexpressed or underexpressed. In some embodiments, the culture or collection
30 of strains may comprise strains which in aggregate overexpress or underexpress at least two gene products comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581, at least 10 gene products comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581, at least 20 gene products comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581, at least 30 gene
35 products comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581, at least 50 gene products comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581, at least 100 gene products comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581, at least 300 gene

products comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581 or more than 300 gene products comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42938-78581, wherein each strain in the culture or collection of strains overexpresses or underexpresses a single gene product selected from the group consisting of SEQ ID NOs. 42938-78581. Alternatively, if desired one or more of the strains in the culture or collection of strains may overexpress or underexpress more than one gene product selected from the group consisting of SEQ ID NOs. 42938-78581.

In other embodiments, the culture or collection of strains comprises a strain in which at least one of the gene products encoded by a homologous coding nucleic acid as defined above is overexpressed or underexpressed. In some embodiments, the culture or collection of strains may comprise strains which in aggregate overexpress or underexpress at least 2, at least 10, at least 20, at least 30, at least 50, at least 100, at least 300 or more than 300 gene products encoded by a homologous coding nucleic acid as defined above. If desired the culture or collection of strains may comprise one or more strains which overexpress or underexpress more than one gene product encoded by a homologous coding nucleic acid. In further embodiments, the culture or collection of strains comprises a strain in which at least one, at least 10, at least 20, at least 30, at least 50, at least 100, at least 300 or more than 300 homologous polypeptides as defined above is overexpressed or underexpressed. If desired the culture or collection of strains may comprise one or more strains which overexpress or underexpress more than one homologous polypeptide.

For example, in some embodiments, the culture or collection of strains comprises a strain in which at least one gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed or underexpressed, wherein each strain overexpresses or underexpresses one gene product. In some

embodiments, the culture or collection of strains may comprise strains in which in aggregate at least 2, at least 10, at least 20, at least 30, at least 50, at least 100, at least 300, or more than 300 gene products selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 is overexpressed or underexpressed, wherein each strain overexpresses or underexpresses one gene product.

If desired, one or more of the strains in the culture or collection of strains may overexpress or underexpress more than one gene product selected from the group consisting of a gene product having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleic acid encoding a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product having at least 25% amino acid identity as determined using FASTA version 3.0t78 with the default parameters to a gene product whose expression is inhibited by an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under stringent conditions, a gene product encoded by a nucleic acid which hybridizes to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213 under moderate conditions, and a gene product whose activity may be complemented by the gene product whose activity is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213.

In further embodiments, the culture or collection of strains comprises a strain in which at least one gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed or underexpressed, wherein each strain overexpresses or underexpresses one gene product. In some embodiments, the culture or collection of strains comprises a strain or a group of strains in which in aggregate at least 2, at least 10, at least 20, at least 30, at least 50, at least 100, at least 300, or more than 300 gene products encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions is overexpressed or underexpressed, wherein each strain overexpresses or underexpresses one gene product.

If desired, one or more of the strains in the culture or collection of strains may overexpress or underexpress more than one gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of a nucleic acid comprising a nucleic acid having at least 70% nucleotide sequence identity as determined using BLASTN version 2.0 with the default parameters to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397, a nucleic acid comprising a nucleotide sequence which hybridizes to a sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under stringent conditions, and a nucleic acid comprising a nucleotide sequence which hybridizes to a nucleotide sequence selected from the group consisting of SEQ ID NOS.: 6214-42397 under moderate conditions.

In additional embodiments, the culture or collection of strains comprises a strain in which at least one gene product comprising a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOS.: 42938-78581 is overexpressed or underexpressed, wherein each strain overexpresses or underexpresses one gene product. In some embodiments, the culture or collection of strains comprises a strain or a group of strains in which in aggregate at least 2, at least 10, at least 20, at

least 30, at least 50, at least 100, at least 300, or more than 300 gene products comprising a polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 and a polypeptide whose activity may be complemented
 5 by a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 is overexpressed or underexpressed, wherein each strain overexpresses or underexpresses one gene product.

If desired, one or more of the strains in the culture or collection of strains may overexpress or underexpress more than one polypeptide selected from the group consisting of a polypeptide having at least 25% amino acid identity as determined using FASTA version 3.0t78 to a
 10 polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581 and a polypeptide whose activity may be complemented by a polypeptide selected from the group consisting of SEQ ID NOs: 42938-78581.

The methods of the present invention may be used to identify the targets of compounds which inhibit the proliferation of any desired cell or organism. In some embodiments, these
 15 methods are employed to identify the targets of compounds which inhibit the proliferation of bacteria, fungi, or protozoans. In further embodiments, these methods are employed to identify the targets of compounds which inhibit the growth of an organism selected from the group consisting of *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*,
 20 *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*,
 25 *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*,
 30 *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 35 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species.

Overexpression may be obtained using a variety of techniques familiar to those skilled in the art. For example, overexpression may be obtained by operably linking a gene encoding a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or level is inhibited by a homologous antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, or a gene product comprising a homologous polypeptide to a promoter which transcribes a higher level of mRNA encoding or comprising the gene product than does a wild type cell.

A variety of promoters may be used to overexpress the gene product described herein, including a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or level is inhibited by a homologous antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, and a gene product comprising a homologous polypeptide. The promoters used to overexpress the gene product may be relatively strong promoters, promoters which possess a moderate level of activity, or relatively weak promoters and may be either constitutive or regulatable promoters. In some embodiments, several strains, each of which overexpresses the gene product to a different extent, may be used in order to optimize the degree of overexpression of the gene product.

In some embodiments, each of the gene products required for proliferation may be placed under the control of several different promoters of varying strengths to create several different strains which express the gene product at varying levels. The level of expression of the gene product in each of the strains is compared to that in wild type cells in order to identify a promoter which provides a desired level of expression relative to wild type cells (i.e. a desired level of overexpression or underexpression). The strain having the desired level of expression is then included in a culture or collection of strains to be contacted with a test compound as discussed below. Examples of suites of regulatable promoters having varying strengths that are useful for the expression of gene products at varying levels are described in U.S. Patent Application Serial Number 10/032,393, filed on December 21, 2002.

The promoter is selected to be active in the type of cell in which the gene product is to be expressed. For example, for overexpression of the gene product in mammalian cells, the gene encoding the gene product may be operably linked to promoters such as the SV40 promoter, the metallothionine promoter, the MMTV promoter, the RSV promoter, the tetP promoter, the adenovirus major late promoter or other promoters known to those skilled in the art. In yeast, the gene encoding the gene product may be operably linked to promoters such as the CYC1, ADHI,

ADHI, GAL1, GAL10, PHO5, PGK or other promoters used in the art. Similarly, in bacteria, the gene encoding the gene product may be operably linked to the , SP6, T3, trc promoter, lac promoter, temperature regulated lambda promoters, the *Bacillus* aprE and nprE promoters (U.S. Patent No. 5,387,521), the bacteriophage lambda P_L and P_R promoters (Renaut, et al., (1981) Gene 15: 81) the trp promoter (Russell, et al., (1982) Gene 20: 23), the tac promoter (de Boer et al., (1983) Proc. Natl. Acad. Sci. USA 80: 21), *B. subtilis* alkaline protease promoter (Stahl et al, (1984) J. Bacteriol. 158, 411-418) alpha amylase promoter of *B. subtilis* (Yang et al., (1983) Nucleic Acids Res. 11, 237-249) or *B. amyloliquefaciens* (Tarkinen, et al, (1983) J. Biol. Chem. 258, 1007-1013), the neutral protease promoter from *B. subtilis* (Yang et al, (1984) J. Bacteriol. 160, 15-21), T7 RNA polymerase promoter (Studier and Moffatt (1986) J Mol Biol. 189(1):113-30), *B. subtilis* xyl promoter or mutant tetR promoter active in bacilli (Geissendorfer & Hillen (1990) Appl. Microbiol. Biotechnol. 33:657-663), Staphylococcal enterotoxin D promoter (Zhang and Stewart (2000) J. Bacteriol. 182(8):2321-5), cap8 operon promoter from *Staphylococcus aureus* (Ouyang et al., (1999) J. Bacteriol. 181(8):2492-500), the lactococcal nisA promoter (Eichenbaum (1998) Appl Environ Microbiol. 64(8):2763-9), promoters from in *Acholeplasma laidlawii* (Jarhede et al., (1995) Microbiology 141 (Pt 9):2071-9), porA promoter of *Neisseria meningitidis* (Sawaya et al., (1999) Gene 233:49-57), the fbpA promoter of *Neisseria gonorrhoeae* (Forng et al., (1997) J. Bacteriol. 179:3047-3052), *Corynebacterium diphtheriae* toxin gene promoter (Schmitt and Holmes (1994) J. Bacteriol. 176(4):1141-9), the hasA operon promoter from Group A Streptococci (Alberti et al., (1998) Mol Microbiol 28(2):343-53), the rpoS promoter of *Pseudomonas putida* (Kojic and Venturi (2001) J. Bacteriol. 183:3712-3720), the *Acinetobacter baumannii* phosphate regulated *ppk* gene promoter (Gavigan et al., Microbiology 145:2931-7 (1999)); the *Acinetobacter baumannii* *adhC1* promoter which is induced under iron limitation and repressed when the cells are cultured in the presence of free inorganic iron (Echenique et al., Microbiology 147:2805-15 (2001)); the *flaB* promoter of pGK12 active in *Borrelia burgdorferi* (Sartakova et al., Proc Natl Acad Sci U S A. 97(9):4850-5 (2000)); the use of Ptrc promoter results in strong inducer-dependent expression in *Burkholderia spp* (Santos et al., FEMS Microbiol Lett 195(1):91-6 (2001)); the iron regulated *sodA* promoter of *Bordetella pertussis* (Graeff-Wohlleben et al., J Bacteriol 179(7):2194-201 (1997)); UV-inducible *bcn* and *uviAB* promoters in *Clostridia spp* (Garnier and Cole Mol Microbiol 2(5):607-14 (1988)); the heat-inducible *clpB* promoter of *Campylobacter jejuni* (Thies et al., Gene 230(1):61-7 (1999)); promoters carrying bacteriophage C1 operator sites in *Klebsiella pneumoniae* (Schoefield et al, J Bacteriol 183(23):6947-50 (2001)); the *Proteus mirabilis* *ureR* promoter (Poore et al., J Bacteriol 183(15):4526-35 (2001)); and the heat-inducible *groESL* promoter in *Listeria monocytogenes*, and the IPTG inducible promoter in pLEX5BA (Krause et al., J. Mol. Biol. 274: 365 (1997). In another embodiment, which may be useful in *Staphylococcus aureus*, the promoter is a novel inducible promoter system, XylT5, comprising a modified T5 promoter fused to the *xylO* operator from the *xylA* promoter of *Staphylococcus aureus*. This promoter is described in U.S. Patent Application Serial Number 10/032,393. In another embodiment the promoter may be a two-

component inducible promoter system in which the T7 RNA polymerase gene is integrated on the chromosome and is regulated by *lacUV5/ lacO* (Brunschwig, E. and Darzins, A. 1992. Gene 111:35-41, and a T7 gene 10 promoter, which is transcribed by T7 RNA polymerase, is fused with a *lacO* operator. In another embodiment the promoter may be the promoters from the plasmids pEPEF3 or pEPEF14, which harbor xylose inducible promoters functional in *E. faecalis*, described in U.S. Patent Application Serial No. 10/032,393. Other promoters which may be used are familiar to those skilled in the art. In fungi, the gene encoding the gene product may be operably linked to the CaACT1 promoter (Morschhauser, Mol. Gen. Genet. 257: 412-420 (1998), or other promoters familiar to those skilled in the art. It will be appreciated that other combinations of organisms and promoters may also be used in the present invention.

In some embodiments, overexpression may be achieved by using homologous recombination to replace the natural promoter which drives expression of the proliferation-required genes described herein with a regulatable promoter. For example, the methods described in U.S. Patent Application 09/948,993 may be used to place the gene required for proliferation under the control of a regulatable promoter. Examples of gene products, which are encoded by genes that can be overexpressed by regulatable promoters introduced by such promoter replacement methods include a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or level is inhibited by a homologous antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, and a gene product comprising a homologous polypeptide.

Briefly, in some embodiments of these methods in which natural promoters are replaced by regulatable promoters, the cells may be haploid, such as bacterial cells. Regulatable promoters that are useful for promoter replacement in bacterial cells include, but are not limited to, the promoters described in U.S. Patent Application Serial Number 10/032,393 filed December 21, 2001. A linear promoter replacement cassette comprising a regulatable promoter flanked by nucleotide sequences having homology to the natural promoter is introduced into the cell. In some embodiments, the cassette also comprises a nucleotide sequence encoding a selectable marker or a marker whose expression is readily identified. The cassette may be a double stranded nucleic acid or a single stranded nucleic acid as described in U.S. Patent Application Serial Number 09/948,993. Upon homologous recombination, the natural promoter is replaced with the regulatable promoter, leaving the gene required for proliferation under the control of the regulatable promoter. Strains in which the gene required for proliferation is under control of the regulatable promoter are grown under conditions in which the regulatable promoter provides a level of the proliferation-required gene product which is above the level in a wild type cell. For example, the strains may be grown in the

presence of an inducer which induces expression from the regulatable promoter, or under conditions in which the action of a repressor on the regulatable promoter is reduced or eliminated.

Alternatively, rather than replacing the native promoters of each of the genes encoding a proliferation-required gene product described herein with a single desired replacement promoter, a plurality of replacement promoters which provide desired expression levels for the gene products to be overexpressed or underexpressed are used. The method is performed as described above except that rather than using a single labeled primer complementary to a nucleotide sequence within the single replacement promoter, a plurality of labeled primers complementary to suitable nucleotide sequences in the plurality of replacement promoters are used.

Alternatively, in embodiments in which the level or activity of proliferation-required gene products described herein is reduced by transcribing an antisense nucleic acid complementary to at least a portion of the genes encoding such gene products, the strains may be designed such that the length of the nucleotide sequence encoding the antisense nucleic acid is different for each gene. Amplification reactions are performed as described above using primers at each end of the gene encoding the antisense nucleic acid such that the amplification product corresponding to each gene has a unique length or a dye which allows it to be distinguished from other amplification products of the same length. Alternatively, the lengths of the nucleotide sequences encoding the antisense nucleic acids may not be unique for each gene, but the primers used in the amplification reaction may be selected such that the length of the amplification product corresponding to each gene is unique.

In another embodiment, the native promoters may be replaced with promoters which include therein or adjacent thereto a unique nucleotide sequence which is distinct from that present in the other replacement promoters in the strains in the culture or collection of strains. In this embodiment, each promoter includes or has adjacent thereto a unique "tag" which may be used to identify strains which proliferate more rapidly or more slowly in the culture or collection of strains. The tag may be detected using hybridization based methods or amplification based methods, including the amplification method which generates amplification products having a unique size for each proliferation required gene described above.

Alternatively, the native promoter which directs the transcription of the proliferation-required genes described herein may be rendered regulatable by inserting a regulatory element into the chromosome of the cell via homologous recombination such that the regulatory element regulates the level of transcription from the promoter. Examples of gene products, which are encoded by genes that have promoters which can be rendered regulatable by regulatory elements inserted by such methods include a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or

level is inhibited by a homologous antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, and a gene product comprising a homologous polypeptide.

A variety of regulatory elements may be used to regulate the expression of essential gene products described herein. The regulatory element may be an operator which is recognized by a repressor (e.g. lac, tet, araBAD repressors) or a nucleotide sequence which is recognized by a transcriptional activator. In some embodiments, the regulatory element may be a transcriptional terminator, a nucleotide sequence which introduces a bend in the DNA or an upstream activating sequence. A linear regulatory element insertion cassette comprising a regulatory element flanked by nucleotide sequences having homology to the natural promoter is introduced into the cell. In some embodiments, the cassette also comprises a nucleotide sequence encoding a selectable marker or a marker whose expression is readily identified. The cassette may be a double stranded nucleic acid or a single stranded nucleic acid as described in U.S. Patent Application Serial Number 09/948,993. Upon homologous recombination, the regulatory element is inserted into the chromosome, leaving the gene required for proliferation under the control of the regulatory element. Strains in which the gene required for proliferation is under control of the regulatory element are grown under conditions in which the regulatable promoter provides a level of the proliferation-required gene product which is above the level in a wild type cell. For example, the strains may be grown in the presence of an inducer which induces expression from the promoter, or under conditions in which the action of a repressor on the promoter is reduced or eliminated. It will be appreciated that the amplification method which generates amplification products having a unique size for each proliferation required gene may be used to detect strains which are overrepresented or underrepresented in the culture or collection of strains. For example, if desired, primers complementary to a nucleotide sequence within the regulatory element may be used in the amplification reaction.

The promoter replacement cassette or regulatory element insertion cassette may be a double stranded nucleic acid, such as an amplicon generated through PCR or other amplification methods, or a single stranded nucleic acid, such as an oligonucleotide. For example, single stranded nucleic acids may be introduced into the chromosome using the methods described in Ellis et al., PNAS 98: 6742-6746, 2001.

In some embodiments, the cell into which the promoter replacement cassette or regulatory element insertion cassette is introduced has an enhanced frequency of recombination. For example, the cells may lack or have a reduced level or activity of one or more exonucleases which would ordinarily degrade the DNA to be inserted into the chromosome. In further embodiments, the cells may both lack or have reduced levels of exonucleases and express or overexpress proteins involved in mediating homologous recombination. For example, if the methods are performed in *Escherichia coli* or other enteric prokaryotes, cells in which the activity of exonuclease V of the RecBCD recombination pathway, which degrades linear nucleic acids, has been reduced or eliminated, such as recB, recC, or recD mutants may be used. In some embodiments, the cells have

mutations in more than one of the *recB*, *recC*, and *recD* genes which enhance the frequency of homologous recombination. For example the cells may have mutations in both the *recB* and *recC* genes.

The promoter replacement or regulatory element insertion methods may also be performed in *Escherichia coli* cells in which the activity of the RecET recombinase system of the Rac prophage has been activated, such as cells which carry an *sbcA* mutation. The *RecE* gene of the rac prophage encodes ExoVIII a 5'-3' exonuclease, while the *RecT* gene of the Rac prophage encodes a single stranded DNA binding protein which facilitates renaturation and D-loop formation. Thus, the gene products of the *RecE* and *RecT* genes or proteins with analogous functions facilitate homologous recombination. The *RecE* and *RecT* genes lie in the same operon but are normally not expressed. However, *sbcA* mutants activate the expression the *RecE* and *RecT* genes. In some embodiments, the methods may be performed in cells which carry mutations in the *recB* and *recC* genes as well as the *sbcA* mutation. The *RecE* and *RecT* gene may be constitutively or conditionally expressed. For example, the methods may be performed in *E. coli* strain JC8679, which carries the *sbcA23*, *recB21* and *recC22* mutations.

In some embodiments, the methods may be performed in *Escherichia coli* cells in which recombination via the *RecF* pathway has been enhanced, such as cells which carry an *sbcB* mutation.

It will be appreciated that the *RecE* and *RecT* gene products, or proteins with analogous functions may be conditionally or constitutively expressed in prokaryotic organisms other than *E. coli*. In some embodiments, these proteins may be conditionally or constitutively expressed in *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,

Staphylococcus aureus, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species. For example, plasmids encoding these gene products may be introduced into the organism. If desired, the coding sequences encoding these gene products may be optimized to reflect the codon preferences of the organism in which they are to be expressed. Similarly, in some embodiments, the organism may contain mutations analogous to the *recB*, *recC*, *recD*, *sbcA* or *sbcB* mutations which enhance the frequency of homologous recombination.

In further embodiments, the promoter replacement or regulatory element insertion methods may be conducted in cells which utilize the Red system of bacteriophage lambda (λ) or analogous systems from other phages to enhance the frequency of homologous recombination. The Red system contains three genes, (γ , β and *exo* whose products are the Gam, Bet and Exo proteins (see Ellis et al. PNAS 98:6742-6746, 2001. The Gam protein inhibits the RecBCD exonuclease V, thus permitting Beta and Exo to gain access to the ends of the DNA to be integrated and facilitating homologous recombination. The Beta protein is a single stranded DNA binding protein that promotes the annealing of a single stranded nucleic acid to a complementary single stranded nucleic acid and mediates strand exchange. The Exo protein is a double-stranded DNA dependent 5'-3' exonuclease that leaves 3' overhangs that can act as substrates for recombination. Thus, constitutive or conditional expression of the λ Red proteins or proteins having analogous functions facilitates homologous recombination.

It will be appreciated that the λ Beta, Gam and Exo proteins, or proteins with analogous functions may be expressed constitutively or conditionally in prokaryotic organisms other than *E. coli*. In some embodiments, these proteins may be conditionally or constitutively expressed in *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*,

Pseudomonas aeruginosa, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species. For example, plasmids encoding these gene products may be introduced into the organism. If desired, the coding sequences encoding these gene products may be optimized to reflect the codon preferences of the organism in which they are to be expressed.

In some embodiments, the cells may have an increased frequency of homologous recombination as a result of more than one of the aforementioned characteristics. In some embodiments, the enhanced frequency of recombination may be a conditional characteristic of the cells which depends on the culture conditions in which the cells are grown. For example, in some embodiments, expression of the λ Red Gam, Exo, and Beta proteins or recE and recT proteins may be regulated. Thus, the cells may have an increased frequency of homologous recombination as a result of any combination of the aforementioned characteristics. For example, in some embodiments, the cell may carry the sbcA and recBC mutations.

In some embodiments, a linear double stranded DNA to be inserted into the chromosome of the organism is introduced into an organism constitutively or conditionally expressing the recE and recT or the λ Beta, Gam and Exo proteins or proteins with analogous functions as described above. In some embodiments, the organism may be *Acinetobacter baumannii*, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*, *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*, *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,

Staphylococcus aureus, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species. In some
 5 embodiments, the double stranded DNA may be introduced into an organism having the recBC and sbcA mutations or analogous mutations.

In other embodiments, a single stranded DNA to be inserted into the chromosome of the organism is introduced into an organism expressing the λ Beta protein or a protein with an analogous function. In some embodiments the single stranded DNA is introduced into an organism
 10 expressing both the λ Beta and Gam proteins or proteins with analogous functions. In further embodiments, the single stranded DNA is introduced into an organism expressing the λ Beta, Gam and Exo proteins or proteins with analogous functions. The λ proteins or analogous proteins may be expressed constitutively or conditionally. In some embodiments, the organism may be
Acinetobacter baumannii, *Anaplasma marginale*, *Aspergillus fumigatus*, *Bacillus anthracis*,
 15 *Bacteroides fragilis*, *Bordetella pertussis*, *Borrelia burgdorferi*, *Burkholderia cepacia*, *Burkholderia fungorum*, *Burkholderia mallei*, *Campylobacter jejuni*, *Candida albicans*, *Candida glabrata* (also called *Torulopsis glabrata*), *Candida tropicalis*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida krusei*, *Candida kefyr* (also called *Candida pseudotropicalis*), *Candida dubliniensis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Clostridium acetobutylicum*,
 20 *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Coccidioides immitis*, *Corynebacterium diphtheriae*, *Cryptococcus neoformans*, *Enterobacter cloacae*, *Enterococcus faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Haemophilus influenzae*, *Helicobacter pylori*, *Histoplasma capsulatum*, *Klebsiella pneumoniae*, *Legionella pneumophila*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Mycobacterium avium*, *Mycobacterium bovis*,
 25 *Mycobacterium leprae*, *Mycobacterium tuberculosis*, *Mycoplasma genitalium*, *Mycoplasma pneumoniae*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Nocardia asteroides*, *Pasteurella haemolytica*, *Pasteurella multocida*, *Pneumocystis carinii*, *Proteus mirabilis*, *Proteus vulgaris*, *Pseudomonas aeruginosa*, *Pseudomonas putida*, *Pseudomonas syringae*, *Salmonella bongori*, *Salmonella choleraesuis*, *Salmonella enterica*, *Salmonella paratyphi*, *Salmonella typhi*, *Salmonella typhimurium*, *Shigella boydii*, *Shigella dysenteriae*, *Shigella flexneri*, *Shigella sonnei*,
 30 *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Staphylococcus haemolyticus*, *Streptococcus pneumoniae*, *Streptococcus mutans*, *Streptococcus pyogenes*, *Treponema pallidum*, *Ureaplasma urealyticum*, *Vibrio cholerae*, *Vibrio parahaemolyticus*, *Vibrio vulnificans*, *Yersinia enterocolitica*, *Yersinia pestis* or any species falling within the genera of any of the above species.

35 In some embodiments, the linear nucleic acid may be introduced into the chromosome of a first organism which has an enhanced frequency of homologous recombination and then transferred to a second organism which is less amenable to direct application of the present methods. For example, the linear nucleic acid may be introduced into the chromosome of *E. coli* and transferred

into a second organism via conjugation or transduction. After introduction into the second organism, the nucleic acid is inserted into the chromosome of the second organism via homologous recombination, thereby effectively transferring the regulatory element from the chromosome of the first organism into the corresponding location in the chromosome of the second organism.

5 In other embodiments, the cells may be diploid cells, such as fungal cells. In some embodiments, one copy of the gene encoding the proliferation-required gene product may be disrupted, rendering it inactive. In further embodiments, one copy of the gene encoding the proliferation-required gene product may be disrupted and the other copy of the gene encoding the proliferation-required gene product may be placed under the control of a regulatable promoter.

10 Such strains may be generated by disrupting the first copy of the gene encoding the proliferation-required gene product by homologous recombination using a disruption cassette comprising a nucleotide sequence encoding an expressible dominant selectable marker flanked on each side by nucleic acids homologous to the target sequence to be disrupted. The second copy of the gene encoding the proliferation-required gene product may be placed under the control of a regulatable

15 promoter by homologous recombination using a promoter replacement cassette comprising a regulatable promoter flanked on each side by nucleic acids homologous to the natural promoter for the proliferation-required gene. The promoter replacement cassette may also include a nucleotide sequence encoding a selectable marker located 5' of the regulatable promoter but between the nucleic acids homologous to the natural promoter.

20 In other embodiments, overexpression may be achieved by operably linking a proliferation-required gene product described herein to a desired promoter in a vector. The vector may be a vector which replicates extrachromosomally or a vector which integrates into the chromosome. For example, if the vector is to be used in bacterial cells, the vector may be a pBR322 based vector or a bacteriophage based vector such as P1 or lambda. If the vector is to be used in *Saccharomyces*

25 *cerevisiae*, it may be a vector based on the 2 micron circle or a vector incorporating a yeast chromosomal origin of replication. If the vector is to be used in mammalian cells, it may be a retroviral vector, SV40 based vector, a vector based on bovine papilloma virus, a vector based on adenovirus, or a vector based on adeno-associated virus. If the vector is to be used in *Candida albicans* it may be a vector comprising a promoter selected from the group consisting of the

30 CaPCK1, MET25, MAL2, PHO5, GAL1,10, STE2 or STE3 promoters. In some embodiments, the vectors described in the following publications may be used: Cip10, an efficient and convenient integrating vector for *Candida albicans*. Murad et al., Yeast 16(4):325-7 (2000); Transforming vector pCPW7, Kvaal et al., : Infect Immun 67(12):6652-62 (1999); Transforming vector pCWOP16, Kvaal et al., : Infect Immun 65(11):4668-75 (1997); double-ARS vector, pRM1, to be

35 used for direct cloning in Ca by complementation of the histidine auxotrophy of strain CA9, Pla et al., Gene 165(1):115-20 (1995); pMK16, that was developed for the transformation of *C. albicans* and carries an ADE2 gene marker and a *Candida* autonomously replicating sequence (CARS) element promoting autonomous replication (cited in Sanglard and Fiechter Yeast 8(12):1065-75

(1992); A plasmid vector (denoted pRC2312) was constructed, which replicates autonomously in *Escherichia coli*, *Saccharomyces cerevisiae* and *Candida albicans*. It contains LEU2, URA3 and an autonomously replicating sequence (ARS) from *C. albicans*, Cannon et al., Mol Gen Genet 235(2-3):453-7 (1992); Expression vector (Cip10-MAL2p) for use in *Candida albicans* has been
 5 constructed in which a gene of interest can be placed under the control of the CaMAL2 maltase promoter and stably integrated at the CaRP10 locus (Backen et al., Yeast 16(12):1121-9 (2000)); (Volker, R. S., A. Sonneborn, C. E. Leuker, and J. F. Ernst. 1997. Efg1p, an essential regulator of morphogenesis of the human pathogen *Candida albicans*, is a member of a conserved class of bHLH proteins regulating morphogenetic processes in fungi. EMBO 16:1982-1991.); and a *C.*
 10 *albicans* transformation vector containing the *C. albicans* URA3 gene, a Candida ARS sequence, and a portion of the *Saccharomyces cerevisiae* 2 microns circle containing the replication origin was constructed. Goshorn et al., Infect Immun 60(3):876-84 (1992). A variety of other vectors suitable for use in foregoing organisms or in any other organism in which the present invention is to be practiced are familiar to those skilled in the art.

15 Underexpression of a proliferation-required gene product described herein may be obtained in a variety of ways. For example, in one embodiment underexpression of the proliferation-required gene product may be achieved by providing an agent, such as an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, an antisense nucleic acid comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400,
 20 or 500 consecutive nucleotides of a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a nucleic acid complementary to a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a nucleic acid complementary to a nucleic acid comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of a nucleotide sequence selected from the group consisting of SEQ ID
 25 NOs.: 6214-42397, a nucleic acid complementary to a nucleic acid which encodes a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a nucleic acid complementary to a nucleic acid which encodes at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids of a polypeptide sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a homologous antisense nucleic acid, an antisense
 30 nucleic acid comprising at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of a homologous nucleic acid, a nucleic acid complementary to a homologous coding nucleic acid, a nucleic acid complementary to at least 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, 150, 200, 300, 400, or 500 consecutive nucleotides of a homologous coding nucleic acid, a nucleic acid complementary to a nucleic acid which encodes a homologous polypeptide, or a
 35 nucleic acid complementary to a nucleic acid which encodes at least 5, 10, 15, 20, 25, 30, 35, 40, 50, 75, 100, or 150 consecutive amino acids of a homologous polypeptide, which reduces the level or activity of the gene product within the cell. In one embodiment, the agent may comprise an antisense nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ

ID NOs.: 1-6213 which is complementary to a nucleic acid encoding the proliferation-required gene product or complementary to a portion of a nucleic acid encoding the proliferation-required gene product.

5 In one example of antisense-inhibition-based underexpression, a nucleic acid which encodes the antisense nucleic acid may be operably linked to a regulatable promoter. When grown under appropriate conditions, such as media containing an inducer of transcription or an agent which alleviates repression of transcription, the antisense nucleic acid is expressed in the cell, thereby reducing the level or activity of the gene product within the cell. In some embodiments, the concentration of the inducer of transcription or the agent which alleviates repression of transcription
10 may be varied to provide optimal results. Such methods have been described previously herein and in U.S. Patent Application Serial Number 09/815,242, U.S. Patent Application Serial Number 09/492,709, U.S. Patent Application Serial Number 09/711,164, or U.S. Patent Application Serial Number 09/741,669.

Alternatively, underexpression of a proliferation-required gene product described herein
15 may be achieved by constructing strains in which the expression of the gene product is under the control of a constitutive or regulatable promoter using methods such as those described above with respect to methods in which the gene product is overexpressed. To provide cells which underexpress the gene product, the cells are grown under conditions in which the gene product is expressed at a level lower than that of a wild type cell. For example, the cells may be grown under
20 conditions in which a repressor reduces the level of transcription from the regulatable promoter.

In other embodiments, underexpression may be achieved by operably linking the gene required for proliferation to a desired promoter in a vector as described above with respect to
embodiments in which gene products required for proliferation are overexpressed. In some
embodiments, the vector may be present in cells in which the chromosomal copy or copies of the
25 gene has been disrupted.

Examples of gene products, which are encoded by genes that can be underexpressed using methods such as those described above with respect to methods in which the gene product is overexpressed include a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a
30 gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or level is inhibited by a homologous antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, and a gene product comprising a homologous polypeptide.

35 One embodiment of the invention includes a method for identifying a gene product described herein on which a compound which inhibits the proliferation of an organism acts. The method employs a culture which comprises a mixture of strains of the organism. At least some of the strains in the culture overexpress a different gene product which is required for the proliferation

of the organism. Preferably, each of the strains in the culture overexpresses a different gene product which is required for proliferation of the organism (i.e. all of the strains in the culture overexpress a gene product which is required for proliferation of the organism). For example, the gene product which is overexpressed in each strain may be a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or level is inhibited by a homologous antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, and a gene product comprising a homologous polypeptide.

Strains that overexpress the proliferation-required gene product may be obtained using the methods described above. The culture may comprise any number of strains which overexpress a gene product required for proliferation. For example the culture may comprise at least two strains, at least 10 strains, at least 20 strains, at least 30, strains, at least 50 strains, at least 100 strains, at least 300 strains or more than 300 strains which overexpress a gene product required for proliferation. In some embodiments, the culture may comprise strains which in aggregate overexpress all or most of the gene products required for proliferation of the organism.

The culture is contacted with a compound which inhibits proliferation of the organism. The compound may be a candidate drug compound obtained from any source. For example, the compound may be a compound generated using combinatorial chemistry, a compound from a natural product library, or an impure or partially purified compound, such as a compound in a partially purified natural extract. The culture is contacted with a sufficient concentration of the compound to inhibit the proliferation of strains of the organism in the culture which do not overexpress the gene product on which the compound acts, such that strains which overexpress said gene product on which the compound acts proliferate more rapidly in the culture than strains which do not overexpress said gene product on which said compound acts. Thus, after a sufficient period of time, the strain which overexpresses the gene product on which the compound acts will be more prevalent in the culture than strains which do not overexpress the gene product on which the compound acts. In a preferred embodiment, the growth conditions and incubation period are selected so that only one strain, the strain overexpressing the target of the compound, is recovered from the culture. Thus, in one embodiment, a plurality of cultures containing a plurality of strains each of which overexpresses a different proliferation-required gene product may be grown in the presence of varying concentrations of the compound. In addition to varying the compound concentrations, in embodiments where expression of the proliferation-required gene product is under the control of a regulatable promoter, the plurality of cultures may be grown at varying concentrations of an agent which regulates the level of expression from the promoter, such as an inducer or an agent which reduces the effect of a repressor on transcription from the promoter. It

will be appreciated, that the cultures may be grown in liquid medium in the presence of the compound whose target is to be identified (and where appropriate in the presence of an agent which regulates the level of expression from the promoter) or alternatively, a liquid culture comprising the strains which overexpress the proliferation-required gene products may be grown in the absence of the compound whose target is to be identified and then introduced onto a solid medium containing the compound (and, where appropriate, also containing an agent which regulates the level of expression from the promoter).

The identity of the overexpressed gene product which is the target of the compound may be determined using a variety of methods. For example, in some embodiments of the present invention, the nucleic acids present in the culture or collection of strains which was contacted with the compound may be compared to the nucleic acids present in a control culture or collection of strains which was not contacted with the compound to identify nucleic acids which are overrepresented in the culture or collection of strains contacted with the test compound relative to the control culture or collection of strains. Alternatively, in some embodiments, the nucleic acids present in a culture or collection of strains contacted with the test compound may be analyzed to identify those nucleic acids which are present without comparison to a control culture or collection of strains.

In some embodiments, the strains which proliferated more rapidly in the culture or collection of strains, i.e. strains having an enhanced ability to proliferate in the presence of a test compound relative to other strains in the culture or collection of strains, are identified as follows. Amplification products which are correlated with each of the overexpressed genes and which are distinguishable from one another are obtained from a culture or collection grown in the presence of a test compound. The amplification products are distinguished from one another to determine whether a particular amplification product is overrepresented in the culture or collection of strains. In some embodiments, the amplification products corresponding to each of the gene products have lengths which permit them to be distinguished from one another. In another embodiment, one or more of the amplification products have similar or identical lengths but are distinguishable from one another based on a detectable agent, such as a dye, attached thereto. In some embodiments, amplification products which are overrepresented are identified by comparing the amplification products from the culture or collection of strains which was contacted with the test compound to the amplification products from a culture or collection of strains which was not contacted with the test compound. Alternatively, amplification products which are overrepresented may be identified by simply identifying the amplification products obtained from the culture or collection of strains contacted with the test compound (for example, only one or a few strains may have proliferated in the presence of the test compound). The above methods for generating distinguishable amplification products may be used in conjunction with any of the methods for generating strains which overexpress gene products required for proliferation described herein in order to facilitate the

identification of strains which proliferate more rapidly or more slowly in the presence of a test compound.

For example, in some embodiments of the present invention, each of the native promoters of each of the genes encoding gene product required for proliferation are replaced by a single
5 desired replacement promoter. After growth of the culture or collection of strains containing the strains in which the promoters have been replaced in the presence of a test compound for a desired period of time, an amplification reaction is performed on nucleic acids obtained from the culture as follows.

The nucleic acids from the culture or collection of strains may be divided into at least two
10 aliquots if desired. In a preferred embodiment the nucleic acids from the culture or collection of strains are divided into four aliquots. A single primer complementary to a nucleotide sequence within the replacement promoter, within the proliferation required genes, or within nucleic acid sequences adjacent to the promoter or proliferation required genes is divided into at least two portions, one portion for each aliquot of nucleic acids. Each portion of the primer is labeled with a
15 distinct detectable dye, such as the 6FAM™, TET™, VIC™, HEX™, NED™, and PET™ dyes obtainable from Applied Biosystems (Foster City, CA). For example, the DS-31 or DS-33 dye sets available from Applied Biosystems (Foster City, CA) may be used to label the primers. Alternatively, the HEX™, NED, JOE, TMR and TET™ dyes available from Amersham Biosciences may be used. Thus, if the nucleic acids from the culture are not divided into aliquots, a
20 single primer labeled with a single dye may be used. If the nucleic acids from the culture are divided into aliquots, at least 2, at least 3, at least 4 or more than 4 primers labeled with distinguishable dyes may be used. Each of the portions of labeled primers are added to each of the aliquots of the nucleic acids from the culture or collection of strains such that each aliquot of nucleic acid receives a single labeled primer with a single detectable dye thereon. In some
25 embodiments, the primers are divided into 3 portions, 4 portions or more than 4 portions, with each portion having a dye which is distinguishable from the dyes on the other portions thereon.

Each of the aliquots of nucleic acids also receives a set of unlabeled primers, with each of the unlabeled primers being complementary to a nucleotide sequence within the promoter, within a nucleotide sequence which is unique to one of the genes encoding gene products required for
30 proliferation which were placed under the control of the replacement promoter, or within nucleotide sequences adjacent to the promoter or proliferation required genes. Each of the aliquots receives primers unique to 1/N proliferation required genes which were placed under the control of the replacement promoter, where N is the number of aliquots (i.e. if the culture or collection of strains consisted of 100 strains in which a gene required for proliferation was placed under the control of
35 the replacement promoter and was divided into four aliquots, then each of the four aliquots of nucleic acids from the culture or collection of strains would receive primers complementary to 25 of the genes). The unlabeled primers are selected so that each will yield an amplification product having a length distinguishable from the length of the amplification product produced with the other

unlabeled primers. Preferably, the amplification products are between about 100-about 400 nucleotides in length, but any lengths which may be distinguished from each other may be used. In addition, in some of the embodiments some of the amplification products may have identical or very similar lengths but be distinguishable from one another due to labeling with distinguishable dyes.

5 A nucleic acid amplification reaction is conducted on each of the nucleic acid aliquots. The amplification products are then separated by length to identify amplification products having increased representation in the culture or collection of strains (i.e. amplification products derived from cells which proliferated more rapidly in the culture or collection of strains). The amplification products are then correlated with the corresponding genes to determine which strains proliferated more rapidly in the culture or collection of strains. If desired, amplification products having increased representation in the culture may be identified by comparing the amplification products obtained from a culture or collection of strains which was contacted with the compound to amplification products obtained from a control culture or collection of strains which was not contacted with the compound. Alternatively, if desired, the amplification products which are obtained from a culture which was contacted with the compound may be directly identified without comparison to a control culture which was not contacted with the compound.

For example, in some embodiments, the amplification products from each of the nucleic acid aliquots are pooled and subjected to capillary electrophoresis. The amplification products are detected by detecting the fluorescent dyes attached thereto and their lengths are determined to identify those amplification products having increased or decreased representation in the culture or collection of strains. Figures 2A and 2B illustrate one embodiment of this method in which the absence of an amplification product from an amplification reaction performed on a culture comprising a plurality of strains underexpressing genes required for proliferation indicates that a test compound acts on the gene corresponding to the missing amplification product. It will be appreciated that the method may also be used to identify an amplification product which is overrepresented in an amplification reaction conducted on a culture or collection of strains overexpressing genes required for proliferation because the test compound acted on the corresponding gene.

Alternatively, in another embodiment, a first amplification reaction is performed on nucleic acids obtained from a culture or collection of strains which was contacted with the compound using a first primer complementary to a nucleotide sequence present upstream or downstream of all of the overexpressed genes (such as a primer complementary to a nucleotide sequence in a replacement promoter upstream of all of the overexpressed genes) and a set of primers complementary to a nucleotide sequence unique to each of the strains (such as a primer complementary to a nucleotide sequence within each of the proliferation-required genes). One of the two amplification primers for each of the proliferation required genes is labeled with a dye as described above. Preferably, the common primer complementary to a nucleotide sequence upstream or downstream of all of the

overexpressed genes is labeled with the dye. The primers used in the amplification reaction are designed so that the amplification product corresponding to each proliferation-required gene has a unique length or a dye which allows it to be distinguished from other amplification products of the same length. A second amplification reaction is conducted on a control culture or collection of strains which was not contacted with the compound using the same primers as in the first amplification reaction. The amplification products from the first amplification reaction are compared to those from the second amplification reaction to identify one or more amplification products which are overrepresented in the culture or collection of strains. For example, the amplification products from the first amplification reaction may be run in a separate lane of a polyacrylamide gel or a separate capillary than the amplification products from the second amplification reaction and the two lanes or capillaries are compared to one another. If desired, in the embodiment where the amplification products from the first amplification reaction are run in a different lane or capillary than the amplification products from the second amplification reaction, the same dye may be used to label the primers in the first and second amplification reactions. Alternatively, if desired, different dyes may be used to label the primers in the first and second amplification reactions. If desired, in the embodiment where the amplification products from the first amplification reaction are run in a different lane or capillary than the amplification products from the second amplification reaction, the same dye may be used to label the primers in the first and second amplification reactions. Alternatively, if desired, different dyes may be used to label the primers in the first and second amplification reactions.

Alternatively, in some embodiments, the primers in the second amplification reaction are labeled with a different dye which is distinguishable from the dye used in the first amplification reaction. In this embodiment, the amplification reactions may be pooled and run in the same lane on a polyacrylamide gel or in the same capillary and the products from each amplification reaction are compared by comparing the amount of each dye present for each amplification product. Figures 3A and 3B illustrate one embodiment of this method in which the absence of an amplification product from the amplification reaction performed on a culture comprising a plurality of strains underexpressing genes required for proliferation which was contacted with the compound indicates that a test compound acts on the gene corresponding to the missing amplification product. It will be appreciated that the method may also be used to identify an amplification product which is overrepresented in an amplification reaction conducted on a culture or collection of strains overexpressing genes required for proliferation because the test compound acted on the corresponding gene.

If desired, rather than dividing the culture into aliquots, individual amplification reactions may be conducted on nucleic acids obtained from the culture or collection of strains. Each amplification reaction contains primers which will yield an amplification product specific for only one of the proliferation required genes. The resulting amplification products from each of the

individual amplification reactions are pooled and amplification products having increased representation in the culture are identified as described above.

In another embodiment, a culture or collection of strains in which gene products required for proliferation are overexpressed from regulatable promoters which replaced the native promoters of the genes encoding these gene products is allowed to grow in the presence of a test compound for a desired number of generations. Preferably, the culture or collection of strains is allowed to grow in the presence of the test compound for at least 20 generations. Nucleic acids are isolated from the culture or collection of strains and an amplification reaction is performed using a primer which is complementary to a nucleotide sequence within the replacement promoter(s) or a nucleotide sequence adjacent to the 5' end thereof and primers which are complementary to a nucleotide sequence within the proliferation required genes or nucleotide sequences adjacent thereto. The resulting amplification product(s) is directly sequenced using a primer complementary to a nucleotide sequence within the replacement promoter.

In one embodiment of the present invention, the vector containing the nucleotide sequence encoding the proliferation-required gene product is obtained from a strain which proliferated more rapidly in the culture using methods such as plasmid preparation techniques. Nucleic acid sequencing techniques are then employed to determine the nucleotide sequence of the gene which was overexpressed.

Alternatively, the identity of the overexpressed gene product which is the target of the compound may be determined by performing a nucleic acid amplification reaction, such as a polymerase chain reaction (PCR), to identify the nucleotide sequence of the gene which was overexpressed. For example, aliquots of a nucleic acid preparation, such as a purified plasmid, from the strain which is recovered from the culture may each be contacted with pairs of PCR primers which would amplify a different proliferation-required gene to determine which pair of primers yields an amplification product.

An alternative method for determining the identity of the gene product described herein which is the target of the compound involves obtaining a nucleic acid array, such as a DNA chip, which contains each of the proliferation-required genes which were overexpressed in the strains in the culture. Each proliferation-required gene occupies a known location in the array. A nucleic acid preparation, such as a plasmid preparation, from the recovered strain is labeled with a detectable agent, such as radioactive or fluorescent moiety, and placed in contact with the nucleic acid array under conditions which permit the labeled nucleic acid to hybridize to complementary nucleic acids on the array. The location on the array to which the labeled nucleic acids hybridize is determined to identify the gene which was overexpressed in the recovered strain. If desired the hybridized nucleic acids from a culture which was contacted with the compound may be compared to the hybridized nucleic acids from a control culture which was not contacted with the compound. Alternatively, the hybridized nucleic acids from a culture which was contacted with the compound may be directly identified without comparison to nucleic acids from a control culture.

In some instances, more than one strain may proliferate more rapidly in the presence of the compound. This may result from a variety of causes. For example, the concentration of the compound may not have been high enough to restrict proliferation only to cells which overexpress one gene product (i.e. the target gene product). While strains which overexpress the target gene product will be the most prevalent strain in the culture, other strains may also have proliferated. In such instances, the identity of the gene product in the strain which is most prevalent in the culture may be identified by quantitating the levels of each of the genes encoding proliferation-required proteins in the culture. This may be accomplished by quantitative PCR, DNA sequencing, hybridization, or array technology as described above.

In other instances, multiple strains will exhibit more rapid proliferation in the culture as a result of a common functional attribute. For example, the strains which proliferate more rapidly may each overexpress a gene product with a common enzymatic activity, such as serine protease activity for example. Alternatively, the strains which proliferate more rapidly may each overexpress a gene product with a common functional domain, such as a cAMP binding domain. In such instances, the common attribute of the strains which proliferate more rapidly may provide information as to the mode of action of the compound or the biochemical activity of the target of the compound. For example, if all of the overexpressed genes in the strains which proliferated more rapidly are serine proteases, the compound acts by inhibiting serine protease activity and the target protein is a serine protease. If desired, the compound may be derivatized and the efficacy of the derivatized compound against each of the strains which proliferated more rapidly may be assessed as described herein in order to identify derivatives which are capable of interacting with a wide range of targets sharing a common activity or binding site (i.e. derivatives which have a greater ability to inhibit the proliferation of all the strains than the original compound) or to identify derivatives having greater specificity for a desired target (i.e. derivatives which have a greater specificity for one of the strains than the original compound). For example, it is possible that a nonessential gene product expressed in the cell might also bind to the initial test compound in addition to the gene product required for proliferation. In such an instance, it is desirable to obtain a derivative of the initial test compound which is specific for the gene product required for proliferation. In addition, it is possible that two gene products required for proliferation might bind to the initial test compound but specificity for one of the gene products is desired.

Rather than employing a single culture which contains multiple strains each of which overexpresses a proliferation-required gene product described herein, the methods of the present invention may be performed using an array of individual strains (i.e. a collection of strains) each of which overexpresses a different proliferation-required gene product. For example, individual strains each overexpressing a different proliferation-required gene product may be grown in different wells of a multiwell plate. Each well is contacted with the compound (and, where appropriate an agent which regulates the level of expression from the promoter). The level of proliferation of the strains in each of the wells is determined to identify a strain which proliferated

more rapidly. The identity of the overexpressed gene product in the strain that proliferated more rapidly is determined as described above.

In another embodiment, individual strains each overexpressing a different proliferation-required gene product (i.e. a collection of strains) are grown at different locations on a solid medium, such as an agar plate. The medium contains the compound and where appropriate an agent which regulates the level of expression from the promoter). The level of proliferation of each of the strains is determined to identify a strain which proliferated more rapidly. The identity of the overexpressed gene product in the strain that proliferated more rapidly is determined as described above.

The above methods may be used to prioritize compound development or to determine whether the compound has been previously identified or whether the target of the compound is the target of a previously identified drug. In particular, if the product is a natural product, it is advantageous to determine whether it has been previously identified prior to investing significant effort in developing it. Thus, in some embodiments of the present invention, the target of a partially purified or purified natural product or a compound produced by combinatorial chemistry is identified using the methods described above and compared to the targets of known drugs. If the target is identical to that of a known drug, further development of the compound is halted.

Alternatively, an array of strains each of which overexpresses a different gene product described herein (i.e. a collection of strains) is grown on solid medium containing a compound to be evaluated. The location of each strain in the array and the gene product overexpressed by that strain is known. The pattern of colonies which grow in the presence of the compound is evaluated and compared to the pattern of colonies which grow in the presence of previously identified drugs. If the pattern of colonies which grow in the presence of the compound being evaluated is the same as the pattern of colonies which grow in the presence of a previously identified drug, further development of the compound is halted.

Additionally in some embodiments, the sequence of the gene product in a strain which proliferated more rapidly in the assays described above is compared to the sequence of gene products from heterologous organisms to determine the likely spectrum of species whose growth would be inhibited by the compound. If the gene product has a high degree of homology to gene products from heterologous species, it is likely that the compound would also inhibit the growth of these heterologous species. Homology may be determined using any of a variety of methods familiar to those skilled in the art. For example, homology may be determined using a computer program such as BLASTP or FASTA. The ability of the compound to inhibit the growth of the heterologous species may then be confirmed by comparing the growth of cells of the heterologous species in the presence and absence of the compound.

Current methods for identifying the target of compounds which inhibit cellular proliferation are laborious and time consuming. The above methods may be employed to allow the targets of a large number of compounds to be rapidly identified. In such methods, the methods described above

are simultaneously performed for each of a large number of compounds. For example, the compounds may be members of a library of compounds generated using combinatorial chemistry or members of a natural product library. In such methods, a plurality of cultures each comprising a plurality of strains each of which overexpresses a different gene product required for proliferation
5 or a plurality of collections of individual strains each of which overexpresses a different gene product required for proliferation is obtained. Each culture or collection of strains is contacted with a different compound in the library and the target of the compound is identified as described above.

In another embodiment, the gene product described herein on which a compound which inhibits the proliferation of an organism acts is identified using a culture which comprises a mixture
10 of strains of the organism including strains which underexpress a different gene product which is required for proliferation of the organism (i.e. at least some of the strains in the culture underexpress a gene product which is required for proliferation of the organism). Preferably, each of the strains in the culture underexpress a different a gene product which is required for the proliferation of the organism (i.e. all of the strains in the culture underexpress a gene product which
15 is required for the proliferation of the organism). In some embodiments, the culture comprises at least one strain which underexpresses a gene product selected from the group consisting of a gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-
20 42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or level is inhibited by a homologous antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, and a gene product comprising a homologous polypeptide.

Strains underexpressing the proliferation-required gene products described herein may be
25 obtained using the methods described above. The culture may comprise any number of strains. For example the culture may comprise at least two strains, at least 10 strains, at least 20 strains, at least 30, strains, at least 50 strains, at least 100 strains, at least 300 strains or more than 300 strains which underexpress a gene product required for proliferation. In some embodiments, the strains in the culture in aggregate may underexpress all or most of the gene products required for proliferation of
30 the organism.

The culture is contacted with a compound which inhibits proliferation of the organism. The compound may be a candidate drug compound obtained from any source. For example, the compound may be a compound generated using combinatorial chemistry, a compound from a natural product library, or an impure or partially purified compound, such as a compound in a
35 partially purified natural extract. The culture is contacted with a sufficient concentration of the compound to inhibit the proliferation of strains of the organism in the culture which underexpress the gene product on which the compound acts, such that strains which do not underexpress the gene product on which the compound acts proliferate more rapidly in the culture than strains which do

underexpress said gene product on which said compound acts. Thus, after a sufficient period of time, the strain which underexpresses the gene product on which the compound acts will be less prevalent in the culture than strains which do not underexpress the gene product on which the compound acts. In one embodiment, the growth conditions and incubation period are selected so that only one strain, the strain underexpressing the target of the compound, proliferates at a reduced rate in the culture. In another embodiment, the growth conditions may be selected so that the strain underexpressing the target of the compound is not recovered from the culture. Thus, in one embodiment, a plurality of cultures containing a plurality of strains each of which underexpresses a different proliferation-required gene product may be grown in the presence of varying concentrations of the compound. In addition to varying the compound concentrations, in embodiments where expression of the proliferation-required gene product is under the control of a regulatable promoter, the plurality of cultures may be grown at varying concentrations of an agent which regulates the level of expression from the promoter, such as an inducer or an agent which reduces the effect of a repressor on transcription from the promoter. It will be appreciated, that the cultures may be grown in liquid medium in the presence of the compound whose target is to be identified (and where appropriate in the presence of an agent which regulates the level of expression from the promoter) or alternatively, a liquid culture comprising the strains which underexpress the proliferation-required gene products may be grown in the absence of the compound whose target is to be identified and then introduced onto a solid medium containing the compound (and, where appropriate, also containing an agent which regulates the level of expression from the promoter).

The identity of the underexpressed gene product which is the target of the compound may be determined using a variety of methods. For example, in some embodiments of the present invention, the nucleic acids present in the culture or collection of strains which was contacted with the compound may be compared to the nucleic acids present in a control culture or collection of strains which was not contacted with the compound to identify nucleic acids which are underrepresented in the culture or collection of strains contacted with the test compound relative to the control culture or strains. Alternatively, in some embodiments, the nucleic acids present in a culture or collection of strains contacted with the test compound may be analyzed to identify those nucleic acids which are missing or present at reduced levels without comparison to a control culture or collection of strains.

In some embodiments of the present invention, the strains which proliferated more slowly in the culture or collection of strains, i.e. strains having an decreased ability to proliferate in the presence of a test compound or which do not proliferate in the presence of a test compound, are identified as follows. Amplification products which are correlated with each of the underexpressed genes and which are distinguishable from one another are obtained from a culture or collection grown in the presence of a test compound. The amplification products are distinguished from one another to determine whether a particular amplification product is underrepresented in the culture or collection of strains. In some embodiments, the amplification products corresponding to each of the

gene products have lengths which permit them to be distinguished from one another. In another embodiment, one or more of the amplification products have similar or identical lengths but are distinguishable from one another based on a detectable agent, such as a dye, attached thereto. In some embodiments, amplification products which are underrepresented are identified by comparing
5 the amplification products from the culture or collection of strains which was contacted with the test compound to the amplification products from a culture or collection of strains which was not contacted with the test compound. Alternatively, amplification products which are underrepresented in the culture or collection of strains may be identified simply by determining which amplification products are missing or present at reduced levels in the culture or collection of
10 strains. The above methods for generating distinguishable amplification products may be used in conjunction with any of the methods for generating strains which underexpress gene products required for proliferation described herein in order to facilitate the identification of strains which proliferate more slowly in the presence of a test compound.

For example, in some embodiments of the present invention, each of the native promoters of each
15 of the genes encoding gene product required for proliferation are replaced by a single desired replacement promoter. After growth of the culture or collection of strains containing the strains in which the promoters have been replaced in the presence of a test compound for a desired period of time, an amplification reaction is performed on nucleic acids obtained from the culture as follows.

The nucleic acids from the culture or collection of strains are divided into at least two
20 aliquots. In a preferred embodiment the nucleic acids from the culture or collection of strains are divided into four aliquots. A single primer complementary to a nucleotide sequence within the replacement promoter, within the proliferation required genes, or within nucleic acid sequences adjacent to the promoter or proliferation required genes is divided into four groups. Each group is labeled with a distinct detectable dye, such as the 6FAMTM, TETTM, VICTM, HEXTM, NEDTM, and
25 PETTM dyes obtainable from Applied Biosystems (Foster City, CA). For example, the DS-31 or DS-33 dye sets available from Applied Biosystems (Foster City, CA) may be used to label the primers. Each of the groups of labeled primers are added to each of the aliquots of the nucleic acids from the culture or collection of strains such that each aliquot of nucleic acid receives a single labeled primer with a single detectable dye thereon.

Each of the aliquots of nucleic acids also receives a set of unlabeled primers, with each of
30 the unlabeled primers being complementary to a nucleotide sequence within the promoter, within a nucleotide sequence which is unique to one of the genes encoding gene products required for proliferation which were placed under the control of the replacement promoter, or within nucleotide sequences adjacent to the promoter or proliferation required genes. Each of the aliquots receives
35 primers unique to 1/N proliferation required genes which were placed under the control of the replacement promoter, where N is the number of aliquots (i.e. if the culture or collection of strains consisted of 100 strains in which a gene required for proliferation was placed under the control of the replacement promoter and was divided into four aliquots, then each of the four aliquots of

nucleic acids from the culture or collection of strains would receive primers complementary to 25 of the genes). The unlabeled primers are selected so that each will yield an amplification product having a length distinguishable from the length of the amplification product produced with the other unlabeled primers. Preferably, the amplification products are between about 100-about 400
5 nucleotides in length, but any lengths which may be distinguished from each other may be used. In addition, in some of the embodiments some of the amplification products may have identical or very similar lengths but be distinguishable from one another due to labeling with distinguishable dyes.

A nucleic acid amplification reaction is conducted on each of the nucleic acid aliquots. The
10 amplification products are then separated by length to identify amplification products decreased representation or which are absent in the culture or collection of strains. The amplification products are then correlated with the corresponding genes to determine which strains proliferated more slowly in the culture or collection of strains. If desired, amplification products having decreased representation in the culture may be identified by comparing the amplification products obtained
15 from a culture or collection of strains which was contacted with the compound to amplification products obtained from a control culture or collection of strains which was not contacted with the compound. Alternatively, if desired, the amplification products which are missing or present at reduced levels in a culture which was contacted with the compound may be directly identified without comparison to a control culture which was not contacted with the compound.

For example, in some embodiments, the amplification products from each of the nucleic
20 acid aliquots are pooled and subjected to capillary electrophoresis. The amplification products are detected by detecting the fluorescent dyes attached thereto and their lengths are determined to identify those amplification products having decreased representation in the culture or collection of strains. Figures 2A and 2B illustrate one embodiment of this method in which the absence of an
25 amplification product from an amplification reaction performed on a culture comprising a plurality of strains underexpressing genes required for proliferation indicates that a test compound acts on the gene corresponding to the missing amplification product.

Alternatively, in another embodiment, a first amplification reaction is performed on nucleic
acids obtained from a culture or collection of strains which was contacted with the compound using
30 a first primer complementary to a nucleotide sequence present upstream or downstream of all of the overexpressed genes (such as a primer complementary to a nucleotide sequence in a replacement promoter upstream of all of the overexpressed genes) and a set of primers complementary to a nucleotide sequence unique to each of the strains (such as a primer complementary to a nucleotide sequence within each of the proliferation-required genes). One of the two amplification primers for
35 each of the proliferation required genes is labeled with a dye as described above. Preferably, the common primer complementary to a nucleotide sequence upstream or downstream of all of the overexpressed genes is labeled with the dye. The primers used in the amplification reaction are designed so that the amplification product corresponding to each proliferation-required gene has a

unique length. A second amplification reaction is conducted on a control culture or collection of strains which was not contacted with the compound using the same primers as in the first amplification reaction. The amplification products from the first amplification reaction are compared to those from the second amplification reaction to identify one or more amplification products which are underrepresented in the culture or collection of strains. For example, the amplification products from the first amplification reaction may be run in a separate lane of a polyacrylamide gel or a separate capillary than the amplification products from the second amplification reaction and the two lanes or capillaries are compared to one another.

Alternatively, in some embodiments, the primers in the second amplification reaction are labeled with a different dye which is distinguishable from the dye used in the first amplification reaction. In this embodiment, the amplification reactions may be pooled and run in the same lane on a polyacrylamide gel or in the same capillary and the products from each amplification reaction are compared by comparing the amount of each dye present for each amplification product. Figures 3A and 3B illustrate one embodiment of this method in which the absence of an amplification product from the amplification reaction performed on a culture comprising a plurality of strains underexpressing genes required for proliferation which was contacted with the compound indicates that a test compound acts on the gene corresponding to the missing amplification product.

If desired, rather than dividing the culture into aliquots, individual amplification reactions may be conducted on nucleic acids obtained from the culture or collection of strains. Each amplification reaction contains primers which will yield an amplification product specific for only one of the proliferation required genes. The resulting amplification products from each of the individual amplification reactions are pooled and amplification products having decreased representation in the culture are identified as described above.

In an alternative embodiment, the representation of each strain in the culture may be assessed by hybridizing detectably labeled nucleic acids encoding the proliferation-required gene products, or portions thereof, obtained from the culture to an array comprising nucleic acids encoding the gene products required for proliferation or portions thereof. Each nucleic acid encoding a gene product required for proliferation or portion thereof occupies a known location on the array. The signal from each location on the array is quantitated to identify those nucleic acids encoding a proliferation-required gene product which are underrepresented in the culture. If desired the hybridized nucleic acids from a culture which was contacted with the compound may be compared to the hybridized nucleic acids from a control culture which was not contacted with the compound. Alternatively, the hybridized nucleic acids from a culture which was contacted with the compound may be directly analyzed without comparison to nucleic acids from a control culture.

In another alternative, each strain underexpressing a gene product required for proliferation may be constructed to contain a unique nucleic acid sequence (referred to herein as a "tag"). The tag may be included in the chromosome of each strain or in an extrachromosomal vector. For example, the tag could be included in a vector encoding an antisense nucleic acid complementary to

a gene encoding a gene product required for proliferation or a portion of such a gene or the tag may be included in the antisense nucleic acid itself. The representation of each strain in the culture may be assessed by performing an amplification reaction using primers complementary to each of the tags and quantitating the levels of the resulting amplification products to identify a tag which is underrepresented or absent from the culture. Since each tag corresponds to one strain, the strain which is underrepresented or absent from the culture may be identified. If desired the tags present in a culture which was contacted with the compound may be compared to the tags present in a control culture which was not contacted with the compound. Alternatively, the tags present in a culture which was contacted with the compound may be analyzed without comparison to a control culture.

It will be appreciated that, if desired, unique tags may also be used in embodiments in which gene products required for proliferation are overexpressed. In some aspects of such embodiments, the tags may be within or adjacent to the promoter which drives expression of the gene encoding the gene product. In such embodiments, the gene product which is overexpressed in strains which proliferate more rapidly in the culture may be identified by detecting the presence or amount of the unique tag corresponding to that gene product in the culture.

In some instances, more than one strain may proliferate less rapidly in the presence of the compound. This may result from a variety of causes. For example, the concentration of the compound may not have been high enough to reduce the proliferation only in cells which underexpress one gene product (i.e. the target gene product). While strains which underexpress the target gene product will be the least prevalent strain in the culture, other strains may also be underrepresented. In such instances, the identity of the gene product in the strain which is least prevalent in the culture (or not recovered from the culture) may be identified by quantitating the levels of each of the genes encoding proliferation-required proteins in the culture. This may be accomplished by quantitative PCR, DNA sequencing, hybridization, or array technology as described above.

In other instances, multiple strains will exhibit less rapid proliferation in the culture as a result of a common functional attribute. For example, the strains which proliferate less rapidly (or the strains which are not recovered from the culture) may each underexpress a gene product with a common enzymatic activity, such as serine protease activity for example. Alternatively, the strains which proliferate less rapidly (or the strains which are not recovered from the culture) may each underexpress a gene product with a common functional domain, such as a cAMP binding domain. In such instances, the common attribute of the strains which proliferate less rapidly (or the strains which are not recovered from the culture) may provide information as to the mode of action of the compound or the biochemical activity of the target of the compound. For example, if all of the underexpressed genes in the strains which proliferated less rapidly are serine proteases, the compound acts by inhibiting serine protease activity and the target protein is a serine protease. If desired, the compound may be derivatized and the efficacy of the derivatized compound against

each of the strains which proliferated more rapidly may be assessed as described herein in order to identify derivatives which are capable of interacting with a wide range of targets sharing a common activity or binding site (i.e. derivatives which have a greater ability to inhibit the proliferation of all the strains than the original compound) or to identify derivatives having greater specificity for a
5 desired target (i.e. derivatives which have a greater specificity for one of the strains than the original compound).

Rather than employing a single culture which contains multiple strains each of which underexpresses a proliferation-required gene product described herein, the methods of the present invention may be performed using an array of individual strains (i.e. a collection of strains) each of
10 which underexpresses a different proliferation-required gene product. For example, individual strains each underexpressing a different proliferation-required gene product may be grown in different wells of a multiwell plate. Each well is contacted with the compound (and, where appropriate an agent which regulates the level of expression from the promoter). The level of proliferation of the strains in each of the wells is determined to identify a strain which proliferated
15 less rapidly or which did not proliferate at all. The identity of the underexpressed gene product in the strain that proliferated less rapidly or which did not proliferate at all is determined as described above.

In another embodiment, individual strains each underexpressing a different proliferation-required gene product (i.e. a collection of strains) are grown at different locations on a solid
20 medium, such as an agar plate. The medium contains the compound and, where appropriate, an agent which regulates the level of expression from the promoter. The level of proliferation of each of the strains is determined to identify a strain which proliferated less rapidly (or a strain which is not recovered from the culture). The identity of the underexpressed gene product in the strain that proliferated less rapidly (or the strain which is not recovered from the culture) is determined as
25 described above.

The above methods may be used to prioritize compound development or to determine whether the compound has been previously identified or whether the target of the compound is the target of a previously identified drug. In particular, if the product is a natural product is advantageous to determine whether it has been previously identified prior to investing significant
30 effort in developing it. Thus, in some embodiments of the present invention, the target of a partially purified or purified natural product or a compound produced by combinatorial chemistry is identified using the methods described above and compared to the targets of known drugs. If the target is identical to that of a known drug, further development of the compound is halted.

Alternatively, an array of strains each of which underexpresses a different gene product
35 described herein (i.e. a collection of strains) is grown on solid medium containing a compound to be evaluated. The location of each strain in the array and the gene product underexpressed by that strain is known. The pattern of colonies which grow less rapidly or fail to grow in the presence of the compound is evaluated and compared to the pattern of colonies which grow less rapidly or fail

to grow in the presence of previously identified drugs. If the pattern of colonies which grow less rapidly or fail to grow in the presence of the compound being evaluated is the same as the pattern of colonies which grow less rapidly or fail to grow in the presence of a previously identified drug, further development of the compound is halted.

5 Additionally, the nucleotide sequence of the gene product described herein in a strain which proliferated less rapidly (or a strain which was not recovered from the culture) in the assays described above is compared to the nucleotide sequence of gene products from heterologous organisms to determine the likely spectrum of species whose growth would be inhibited by the compound. If the gene product has a high degree of homology to gene products from heterologous
10 species, it is likely that the compound would also inhibit the growth of these heterologous species. Homology may be determined using any of a variety of methods familiar to those skilled in the art. For example, homology may be determined using a computer program such as BLASTP or FASTA. The ability of the compound to inhibit the growth of the heterologous species may then be confirmed by comparing the growth of cells of the heterologous species in the presence and absence
15 of the compound.

 In other embodiments, the present invention uses collections or cultures of strains comprising both strains which overexpress gene products described herein required for cellular proliferation and strains which underexpress the same gene products required for cellular proliferation. The gene product which is overexpressed or underexpressed in each strain may be a
20 gene product whose activity or level is inhibited by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 1-6213, a gene product encoded by a nucleic acid comprising a nucleotide sequence selected from the group consisting of SEQ ID NOs.: 6214-42397, a gene product comprising an amino acid sequence selected from the group consisting of SEQ ID NOs.: 42398-78581, a gene product whose activity or level is inhibited by a homologous
25 antisense nucleic acid, a gene product encoded by a homologous coding nucleic acid, and a gene product comprising a homologous polypeptide.

 The culture or collection of strains is contacted with a compound and the nucleic acids present in the culture or collection of strains are analyzed. Preferably, nucleic acids derived from overexpressing strains can be distinguished from those derived from underexpressing strains. For
30 example, the overexpressing strains may be obtained using promoter replacement as described above while the underexpressing strains may be obtained by expressing antisense nucleic acids. Accordingly, in one embodiment, amplification primers may be designed which will uniquely amplify nucleic acids from the overexpressing strains or the underexpressing strains. If a compound acts on a gene product which was overexpressed and underexpressed in the culture, then
35 the amplification product obtained from the strain in the culture or collection which overexpressed gene product will be overrepresented in the culture or collection while the amplification product obtained from the strain which underexpressed the gene product will be underrepresented in the culture or collection. If desired, nucleic acids from a culture or collection which was contacted with

the compound may be compared to nucleic acids from a control culture or collection which was not contacted with the compound. Alternatively, nucleic acids from a culture or collection which was contacted with the compound may be directly analyzed without comparison to a control culture or collection.

5 In some embodiments, strains are constructed in which a nucleic acid complementary to a gene encoding a gene product described herein required for proliferation or a portion thereof is operably linked to a regulatable promoter. For example, in some embodiments, the strains may transcribe an antisense nucleic acid selected from the group consisting of SEQ ID NOs.: 1-6213 or fragments thereof which inhibit proliferation or reduce the activity or level of the gene product
10 encoded by the gene comprising a nucleotide sequence complementary to the antisense nucleic acid or homologous antisense nucleic acids or fragments thereof. In other embodiments, the strains may transcribe an antisense nucleic acid which reduces the activity or level of a gene product encoded by SEQ ID NOs.: 6214-42397, the polypeptides of SEQ ID NOs.: 42398-78581, homologous coding nucleic acids or homologous polypeptides. A culture comprising a plurality of such strains
15 wherein each strain expresses an antisense nucleic acid against a different gene product required for proliferation is grown in the presence of varying levels of a compound which inhibits proliferation and in the presence of varying levels of an agent which regulates the level of transcription from the regulatable promoter. Nucleic acids samples are obtained from the culture, detectably labeled and hybridized to a solid support comprising nucleic acids containing the genes encoding the
20 proliferation-required gene products or a portion thereof. The level of hybridization is quantitated for each nucleic acid encoding each of the proliferation-required gene products to determine the rate at which each of the strains proliferated in the culture. If the antisense nucleic acid expressed by a strain in the culture is not complementary to all or a portion of the gene encoding the target of the compound (i.e. a nonspecific strain), then the hybridization intensity for that strain will not be
25 correlated with the concentration of the compound (See Figure 4), while if the antisense nucleic acid expressed by a strain in the culture is complementary to all or a portion of the gene encoding the target of the compound, the hybridization intensity for that strain will be intimately correlated with the concentration of the compound (See Figure 5). In this manner, the target of the compound may be identified. It will be appreciated that, as described above, rather than growing the strains in
30 a single culture, each strain may be grown in a different location on a solid medium or in a different well of a multiwell plate.

The methods described above can be simultaneously performed for each of a large number of compounds. For example, the compounds may be members of a library of compounds generated using combinatorial chemistry or members of a natural product library. In such methods, a plurality
35 of cultures each comprising a plurality of strains each of which overexpresses or underexpresses a different gene product required for proliferation or a plurality of collections of individual strains each of which overexpresses or underexpresses a different gene product required for proliferation is

obtained. Each culture or collection of strains is contacted with a different compound in the library and the target of the compound is identified as described above.

In still another embodiment, the antisense nucleic acids of the present invention (including the antisense nucleic acids of SEQ ID NOs. 1-6213 fragments thereof or homologous antisense nucleic acids or fragments thereof) that inhibit bacterial growth or proliferation can be used as antisense therapeutics for killing bacteria. The antisense sequences can be complementary to one of SEQ ID NOs.: 6214-42397 or fragments thereof, homologous coding nucleic acids or fragments thereof. Alternatively, antisense therapeutics can be complementary to operons in which proliferation-required genes reside (i.e. the antisense nucleic acid may hybridize to a nucleotide sequence of any gene in the operon in which the proliferation-required genes reside). Further, antisense therapeutics can be complementary to a proliferation-required gene or portion thereof with or without adjacent noncoding sequences, an intragenic sequence (i.e. a sequence within a gene), an intergenic sequence (i.e. a sequence between genes), a sequence spanning at least a portion of two or more genes, a 5' noncoding region or a 3' noncoding region located upstream or downstream from the actual sequence that is required for bacterial proliferation or an operon containing a proliferation-required gene.

In addition to therapeutic applications, the present invention encompasses the use of nucleic acids complementary to nucleic acids required for proliferation as diagnostic tools. For example, nucleic acid probes comprising nucleotide sequences complementary to proliferation-required sequences that are specific for particular species of cells or microorganisms can be used as probes to identify particular microorganism species or cells in clinical specimens. This utility provides a rapid and dependable method by which to identify the causative agent or agents of a bacterial infection. This utility would provide clinicians the ability to accurately identify the species responsible for the infection and administer a compound effective against it. In an extension of this utility, antibodies generated against proteins translated from mRNA transcribed from proliferation-required sequences can also be used to screen for specific cells or microorganisms that produce such proteins in a species-specific manner.

Other embodiments of the present invention include methods of identifying compounds which inhibit the activity of gene products required for cellular proliferation using rational drug design. As discussed in more detail below, in such methods, the structure of the gene product is determined using techniques such as x-ray crystallography or computer modeling. Compounds are screened to identify those which have a structure which would allow them to interact with the gene product or a portion thereof to inhibit its activity. The compounds may be obtained using any of a variety of methods familiar to those skilled in the art, including combinatorial chemistry. In some embodiments, the compounds may be obtained from a natural product library. In some embodiments, compounds having a structure which allows them to interact with the active site of a gene product, such as the active site of an enzyme, or with a portion of the gene product which interacts with another biomolecule to form a complex are identified. If desired, lead compounds may be identified and further optimized to provide compounds which are highly effective against the gene product.

The following examples teach the genes of the present invention and a subset of uses for the genes identified as required for proliferation. These examples are illustrative only and are not intended to limit the scope of the present invention.

EXAMPLES

5 The following examples are directed to the identification and exploitation of genes required for proliferation. Methods of gene identification are discussed as well as a variety of methods to utilize the identified sequences. It will be appreciated that any of the antisense nucleic acids, proliferation-required genes or proliferation-required gene products described herein, or portions thereof, may be used in the procedures described below, including the antisense nucleic acids of SEQ ID NOS.: 1-6213,
10 the nucleic acids of SEQ ID NOS.: 6214-42397, or the polypeptides of SEQ ID NOS.: 42398-78581. Likewise, homologous antisense nucleic acids, homologous coding nucleic acids, homologous polypeptides or portions of any of the above-mentioned nucleic acids or polypeptides, may be used in any of the procedures described below.

**Genes Identified as Required for Proliferation of *Escherichia coli*, *Staphylococcus aureus*,
15 *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Salmonella typhimurium*.**

Genomic fragments were operably linked to an inducible promoter in a vector and assayed for growth inhibition activity. Example 1 describes the examination of a library of genomic fragments cloned into vectors comprising inducible promoters. Upon induction with xylose or IPTG, the vectors
20 produced an RNA molecule corresponding to the subcloned genomic fragments. In those instances where the genomic fragments were in an antisense orientation with respect to the promoter, the transcript produced was complementary to at least a portion of an mRNA (messenger RNA) encoding a *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* or *Salmonella typhimurium* gene product such that they interacted with
25 sense mRNA produced from various *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* or *Salmonella typhimurium* genes and thereby decreased the translation efficiency or the level of the sense messenger RNA thus decreasing production of the protein encoded by these sense mRNA molecules. In cases where the sense mRNA encoded a protein required for proliferation, bacterial cells containing a vector from which transcription
30 from the promoter had been induced failed to grow or grew at a substantially reduced rate. Additionally, in cases where the transcript produced was complementary to at least a portion of a non-translated RNA and where that non-translated RNA was required for proliferation, bacterial cells containing a vector from which transcription from the promoter had been induced also failed to grow or grew at a substantially reduced rate. In contrast, cells grown under non-inducing conditions grow at a
35 normal rate.

The above method was used to identify genes required for cellular proliferation in *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Salmonella typhimurium*. Additionally, a number of genes required for cellular

proliferation in *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Salmonella typhimurium*, which have been described in the following U.S. Patent Applications: U.S. Patent Application Serial Number 09/492,709, filed January 27, 2000; U.S. Patent Application Serial Number 09/711,164, filed November 9, 2000; 5 U.S. Patent Application Serial Number 09/741,669, filed December 19, 2000 and U.S. Patent Application Serial Number 09/815,242 filed March 21, 2001, U.S. Provisional Patent Application Serial Number 60/342,923, filed October 25, 2001, have been previously identified using the above method.

EXAMPLE 1

10 Inhibition of Bacterial Proliferation after Induction of Antisense Expression

To identify genes required for proliferation of *E. coli*, random genomic fragments were cloned into the IPTG-inducible expression vector pLEX5BA (Krause et al., J. Mol. Biol. 274: 365 (1997) or a modified version of pLEX5BA, pLEX5BA-3' in which a synthetic linker containing a T7 terminator was ligated between the PstI and HindIII sites of pLEX5BA. In particular, to 15 construct pLEX5BA-3', the following oligonucleotides were annealed and inserted into the PstI and HindIII sites of pLEX5BA:

5' -GTCTAGCATAACCCCTTGGGGCCTCTAAACGGGTCCTTGAGGGGTTTTTTGA-3' (SEQ ID NO: 78584)
 5' -AGCTTCAAAAAACCCCTCAAGGACCCGTTTAGAGGCCCAAGGGGTAT
 20 GCTAGACTGCA-3' (SEQ ID NO: 78585)

Random fragments of *E. coli* genomic DNA were generated by DNaseI digestion or sonication, filled in with T4 polymerase, and cloned into the SmaI site of pLEX5BA or pLEX5BA-3'. Upon activation or induction, the promoter transcribed the random genomic fragments.

A number of vectors which allow the production of transcripts which have an extended 25 lifetime in *E. coli* as well as other Gram negative bacteria can also be utilized in conjunction with these antisense inhibition experiments. Such vectors are described in U.S. Provisional Patent Application Serial Number 60/343,512, filed December 21, 2001. Briefly, the stabilized antisense RNA may comprise an antisense RNA which was identified as inhibiting proliferation as described above which has been engineered to contain at least one stem loop flanking each end of the 30 antisense nucleic acid. In some embodiments, the at least one stem-loop structure formed at the 5' end of the stabilized antisense nucleic acid comprises a flush, double stranded 5' end. In some embodiments, one or more of the stem loops comprises a rho independent terminator. In additional embodiments, the stabilized antisense RNA lacks a ribosome binding site. In further embodiments, the stabilized RNA lacks sites which are cleaved by one or more RNases, such as RNase E or 35 RNase III. In some embodiments, the stabilized antisense RNA may be transcribed in a cell which the activity of at least one enzyme involved in RNA degradation has been reduced. For example, the activity of an enzyme such as RNase E, RNase II, RNase III, polynucleotide phosphorylase, and poly(A) polymerase, RNA helicase, enolase or an enzyme having similar functions may be reduced in the cell.

To study the effects of transcriptional induction in liquid medium, growth curves were carried out by back diluting cultures 1:200 into fresh media with or without 1 mM IPTG and measuring the OD₄₅₀ every 30 minutes (min). To study the effects of transcriptional induction on solid medium, 10², 10³, 10⁴, 10⁵, 10⁶, 10⁷ and 10⁸ fold dilutions of overnight cultures were prepared. Aliquots of from 0.5 to 3 µl of these dilutions were spotted on selective agar plates with or without 1 mM IPTG. After overnight incubation, the plates were compared to assess the sensitivity of the clones to IPTG.

Of the numerous clones tested, some clones were identified as containing a sequence that inhibited *E. coli* growth after IPTG induction. Accordingly, the gene to which the inserted nucleic acid sequence corresponds, or a gene within the operon containing the inserted nucleic acid, is required for proliferation in *E. coli*.

Nucleic acids involved in proliferation of *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Salmonella typhimurium* were identified as follows. Randomly generated fragments of *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* or *Salmonella typhimurium* genomic DNA were transcribed from inducible promoters.

In the case of *Staphylococcus aureus*, a novel inducible promoter system, XylT5, comprising a modified T5 promoter fused to the *xytO* operator from the *xytA* promoter of *Staphylococcus aureus* was used. The promoter is described in U.S. Patent Application Serial Number 10/032,393, filed December 21, 2001. Transcription from this hybrid promoter is inducible by xylose.

Randomly generated fragments of *Salmonella typhimurium* genomic DNA were transcribed from an IPTG inducible promoter in pLEX5BA (Krause et al., J. Mol. Biol. 274: 365 (1997) or a derivative thereof. Randomly generated fragments of *Klebsiella pneumoniae* genomic DNA were expressed from an IPTG inducible promoter in pLEX5BA-Kan. To construct pLEX5BA-kan, pLEX5BA was digested to completion with *ClaI* in order to remove the *bla* gene. Then the plasmid was treated with a partial *NotI* digestion and blunted with T4 DNA polymerase. A 3.2 kbp fragment was then gel purified and ligated to a blunted 1.3 kbp kan gene from pKan^r. Kan resistant transformants were selected on Kan plates. Orientation of the kan gene was checked by *SmaI* digestion. A clone, which had the kan gene in the same orientation as the *bla* gene, was used to identify genes required for proliferation of *Klebsiella pneumoniae*. Randomly generated fragments of *Pseudomonas aeruginosa* genomic DNA were transcribed from a two-component inducible promoter system. Integrated on the chromosome was the T7 RNA polymerase gene regulated by *lacUV5/lacO* (Brunschwig, E. and Darzins, A. 1992. Gene 111:35-41. On a separate plasmid, a T7 gene 10 promoter, which is transcribed by T7 RNA polymerase, was fused with a *lacO* operator followed by a multiple cloning site.

Should the genomic DNA downstream of the promoter contain, in an antisense orientation, at least a portion of an mRNA or a non-translated RNA encoding a gene product involved in proliferation, then induction of transcription from the promoter will result in detectable inhibition of proliferation.

5 In the case of *Staphylococcus aureus*, a shotgun library of *Staphylococcus aureus* genomic fragments was cloned into the vector pXyIT5-P15a, which harbors the XyIT5 inducible promoter. The vector was linearized at a unique *Bam*HI site immediately downstream of the XyIT5 promoter/operator. The linearized vector was treated with shrimp alkaline phosphatase to prevent reclosure of the linearized ends. Genomic DNA isolated from *Staphylococcus aureus* strain RN450
10 was fully digested with the restriction enzyme *Sau*3A, or, alternatively, partially digested with DNase I and "blunt-ended" by incubating with T4 DNA polymerase. Random genomic fragments between 200 and 800 base pairs in length were selected by gel purification. The size-selected genomic fragments were added to the linearized and dephosphorylated vector at a molar ratio of 0.1 to 1, and ligated to form a shotgun library.

15 The ligated products were transformed into electrocompetent *E. coli* strain XL1-Blue MRF' (Stratagene) and plated on LB medium with supplemented with carbenicillin at 100 µg/ml. Resulting colonies numbering 5×10^5 or greater were scraped and combined, and were then subjected to plasmid purification.

The purified library was then transformed into electrocompetent *Staphylococcus aureus*
20 RN4220. Resulting transformants were plated on agar containing LB + 0.2% glucose (LBG medium) + chloramphenicol at 15 µg/ml (LBG+CM15 medium) in order to generate 100 to 150 platings at 500 colonies per plating. The colonies were subjected to robotic picking and arrayed into wells of 384 well culture dishes. Each well contained 100µl of LBG + CM15 liquid medium. Inoculated 384 well dishes were incubated 16 hours at 37°C, and each well was robotically gridded
25 onto solid LBG + CM15 medium with or without 2% xylose. Gridded plates were incubated 16 hours at 37°C, and then manually scored for arrayed colonies that were growth-compromised in the presence of xylose.

Arrayed colonies that were growth-sensitive on medium containing 2% xylose, yet were able to grow on similar medium lacking xylose, were subjected to further growth sensitivity
30 analysis as follows: Colonies from the plate lacking xylose were manually picked and inoculated into individual wells of a 96 well culture dish containing LBG + CM15, and were incubated for 16 hours at 37°C. These cultures were robotically diluted 1/100 into fresh medium and allowed to incubate for 4 hours at 37°C, after which they were subjected to serial dilutions in a 384 well array and then gridded onto media containing 2% xylose or media lacking xylose. After growth for 16
35 hours at 37°C, the arrays that resulted on the two media were compared to each other. Clones that grew similarly at all dilutions on both media were scored as a negative and were no longer considered. Clones that grew on xylose medium but failed to grow at the same serial dilution on the non-xylose plate were given a score based on the differential, i.e. should the clone grow at a

serial dilution of 10^4 or less on the xylose plate and grow at a serial dilution of 10^8 or less on the non-xylose plate, then the corresponding clone received a score of "4" representing the log difference in growth observed.

For *Salmonella typhimurium* and *Klebsiella pneumoniae* growth curves were carried out by back diluting cultures 1:200 into fresh media containing 1 mM IPTG or media lacking IPTG and measuring the OD₄₅₀ every 30 minutes (min). To study the effects of transcriptional induction on solid medium, 10^2 , 10^3 , 10^4 , 10^5 , 10^6 , 10^7 and 10^8 fold dilutions of overnight cultures were prepared. Aliquots of from 0.5 to 3 μ l of these dilutions were spotted on selective agar plates with or without 1 mM IPTG. After overnight incubation, the plates were compared to assess the sensitivity of the clones to IPTG.

Nucleic acids involved in proliferation of *Pseudomonas aeruginosa* were identified as follows. Randomly generated fragments of *Pseudomonas aeruginosa* genomic DNA were transcribed from a two-component inducible promoter system. Integrated on the chromosome was the T7 RNA polymerase gene regulated by *lacUV5/ lacO* (Brunschwig, E. and Darzins, A. 1992. Gene 111:35-41). On an expression plasmid there was a T7 gene 10 promoter, which is transcribed by T7 RNA polymerase, fused with a *lacO* operator followed by a multiple cloning site. Transcription from this hybrid promoter is inducible by IPTG. Should the genomic DNA downstream of the promoter contain, in an antisense orientation, at least a portion of an mRNA encoding a gene product involved in proliferation, then induction of expression from the promoter will result in detectable inhibition of proliferation.

A shotgun library of *Pseudomonas aeruginosa* genomic fragments was cloned into the vectors pEP5, pEP5S, or other similarly constructed vectors which harbor the T7*lacO* inducible promoter. The vector was linearized at a unique *Sma*I site immediately downstream of the T7*lacO* promoter/operator. The linearized vector was treated with shrimp alkaline phosphatase to prevent reclosure of the linearized ends. Genomic DNA isolated from *Pseudomonas aeruginosa* strain PAO1 was partially digested with DNase I and "blunt-ended" by incubating with T4 DNA polymerase. Random genomic fragments between 200 and 800 base pairs in length were selected by gel purification. The size-selected genomic fragments were added to the linearized and dephosphorylated vector at a molar ratio of 2 to 1, and ligated to form a shotgun library.

The ligated products were transformed into electrocompetent *E. coli* strain XL1-Blue MRF' (Stratagene) and plated on LB medium with carbenicillin at 100 μ g/ml or Streptomycin 100 μ g/ml. Resulting colonies numbering 5×10^5 or greater were scraped and combined, and were then subjected to plasmid purification.

The purified library was then transformed into electrocompetent *Pseudomonas aeruginosa* strain PAO1. Resulting transformants were plated on LB agar with carbenicillin at 100 μ g/ml or Streptomycin 40 μ g/ml in order to generate 100 to 150 platings at 500 colonies per plating. The colonies were subjected to robotic picking and arrayed into wells of 384 well culture dishes. Each well contained 100 μ l of LB + CB 100 or Streptomycin 40 liquid medium. Inoculated 384 well

dishes were incubated 16 hours at room temperature, and each well was robotically gridded onto solid LB + CB100 or Streptomycin 40 medium with or without 1 mM IPTG. Gridded plates were incubated 16 hours at 37°C, and then manually scored for arrayed colonies that were growth-compromised in the presence of IPTG.

5 Arrayed colonies that were growth-sensitive on medium containing 1 mM IPTG, yet were able to grow on similar medium lacking IPTG, were subjected to further growth sensitivity analysis as follows: Colonies from the plate lacking IPTG were manually picked and inoculated into individual wells of a 96 well culture dish containing LB + CB100 or Streptomycin 40, and were incubated for 16 hours at 30°C. These cultures were robotically diluted 1/100 into fresh medium
10 and allowed to incubate for 4 hours at 37°C, after which they were subjected to serial dilutions in a 384 well array and then gridded onto media with and without 1 mM IPTG. After growth for 16 hours at 37°C, the arrays of serially diluted spots that resulted were compared between the two media. Clones that grew similarly at all dilutions on both media were scored as a negative and were no longer considered. Clones that grew on IPTG medium but failed to grow at the same serial
15 dilution on the non-IPTG plate were given a score based on the differential, i.e. should the clone grow at a serial dilution of 10^4 or less on the IPTG plate and grow at a serial dilution of 10^8 or less on the IPTG plate, then the corresponding clone received a score of "4" representing the log difference in growth observed.

Following the identification of those vectors that, upon induction, negatively impacted
20 *Pseudomonas aeruginosa* growth or proliferation, the inserts or nucleic acid fragments contained in those vectors were isolated for subsequent characterization. Vectors of interest were subjected to nucleic acid sequence determination.

Nucleic acids involved in proliferation of *E. faecalis* were identified as follows. Randomly generated fragments of genomic DNA were expressed from the vectors pEPEF3 or pEPEF14,
25 which contain the CP25 or P59 promoter, respectively, regulated by the xyl operator/repressor. These plasmids as well as other vectors useful for the expression of nucleic acids in *Enterococcus faecalis* and other Gram positive organisms are described in U.S. Patent Application Serial Number 10/032,393, filed December 21, 2001, the disclosure of which is incorporated herein by reference in its entirety. Should the genomic DNA downstream of the promoter contain, in an antisense
30 orientation, at least a portion of a mRNA encoding a gene product involved in proliferation, then induction of expression from the promoter will result in detectable inhibition of proliferation.

A shotgun library of *E. faecalis* genomic fragments was cloned into the vector pEPEF3 or pEPEF14, which harbor xylose inducible promoters. The vector was linearized at a unique *Sma*I site immediately downstream of the promoter/operator. The linearized vector was treated with
35 alkaline phosphatase to prevent reclosure of the linearized ends. Genomic DNA isolated from *E. faecalis* strain OG1RF was partially digested with DNase I and "blunt-ended" by incubating with T4 DNA polymerase. Random genomic fragments between 200 and 800 base pairs in length were

selected by gel purification. The size-selected genomic fragments were added to the linearized and dephosphorylated vector at a molar ratio of 2 to 1, and ligated to form a shotgun library.

The ligated products were transformed into electrocompetent *E. coli* strain TOP10 cells (Invitrogen) and plated on LB medium with erythromycin (Erm) at 150 µg/ml. Resulting colonies numbering 5 x 10⁵ or greater were scraped and combined, and were then subjected to plasmid purification.

The purified library was then transformed into electrocompetent *E. faecalis* strain OG1RF. Resulting transformants were plated on Todd-Hewitt (TH) agar with erythromycin at 10 µg/ml in order to generate 100 to 150 platings at 500 colonies per plating. The colonies were subjected to robotic picking and arrayed into wells of 384 well culture dishes. Each well contained 100 µl of THB + Erm 10 µg/ml. Inoculated 384 well dishes were incubated 16 hours at room temperature, and each well was robotically gridded onto solid TH agar + Erm with or without 5% xylose. Gridded plates were incubated 16 hours at 37°C, and then manually scored for arrayed colonies that were growth-compromised in the presence of xylose.

Arrayed colonies that were growth-sensitive on medium containing 5% xylose, yet were able to grow on similar medium lacking xylose, were subjected to further growth sensitivity analysis. Colonies from the plate lacking xylose were manually picked and inoculated into individual wells of a 96 well culture dish containing THB + Erm 10, and were incubated for 16 hours at 30°C. These cultures were robotically diluted 1/100 into fresh medium and allowed to incubate for 4 hours at 37°C, after which they were subjected to serial dilution on plates containing 5% xylose or plates lacking xylose. After growth for 16 hours at 37°C, the arrays of serially diluted spots that resulted were compared between the two media. Colonies that grew similarly on both media were scored as a negative and corresponding colonies were no longer considered. Colonies on xylose medium that failed to grow to the same serial dilution compared to those on the non-xylose plate were given a score based on the differential. For example, colonies on xylose medium that only grow to a serial dilution of -4 while they were able to grow to -8 on the non-xylose plate, then the corresponding transformant colony received a score of "4" representing the log difference in growth observed.

Following the identification of those vectors that, upon induction, negatively impacted *E. faecalis* growth or proliferation, the inserts or nucleic acid fragments contained in those expression vectors were isolated for subsequent characterization. The inserts in the vectors of interest were subjected to nucleotide sequence determination.

It will be appreciated that other restriction enzymes and other endonucleases or methodologies may be used to generate random genomic fragments. In addition, random genomic fragments may be generated by mechanical shearing. Sonication and nebulization are two such techniques commonly used for mechanical shearing of DNA.

EXAMPLE 2

Nucleotide Sequence Determination of Identified Clones Transcribing Nucleic Acid Fragments with Detrimental Effects on *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* or *Salmonella typhimurium* Proliferation

5 Plasmids from clones that received a dilution plating score of "2" or greater were isolated to obtain the genomic DNA insert responsible for growth inhibition as follows.

The nucleotide sequences of the nucleic acid sequences which inhibited the growth of *Escherichia coli* were determined using plasmid DNA isolated using QIAPREP (Qiagen, Valencia, CA) and methods supplied by the manufacturer. The primers used for sequencing the inserts were 5' -
 10 TGTTTATCAGACCGCTT - 3' (SEQ ID NO: 78586) and 5' - ACAATTTACACAGCCTC - 3' (SEQ ID NO: 78587). These sequences flank the polylinker in pLEX5BA.

The nucleotide sequences of the nucleic acid sequences which inhibited the growth of *Staphylococcus aureus* were determined as follows. *Staphylococcus aureus* were grown in standard laboratory media (LB or TB with 15 ug/ml Chloramphenicol to select for the plasmid). Growth
 15 was carried out at 37°C overnight in culture tubes or 2 ml deep well microtiter plates.

Lysis of *Staphylococcus aureus* was performed as follows. Cultures (2-5 ml) were centrifuged and the cell pellets resuspended in 1.5 mg/ml solution of lysostaphin (20 µl/ml of original culture) followed by addition of 250 µl of resuspension buffer (Qiagen). Alternatively, cell pellets were resuspended directly in 250 µl of resuspension buffer (Qiagen) to which 5-20 µl of a 1
 20 mg/ml lysostaphin solution were added.

DNA was isolated using Qiagen miniprep kits or Wizard (Qiagen) miniprep kits according to the instructions provided by the manufacturer.

The genomic DNA inserts were amplified from the purified plasmids by PCR as follows.

1 µl of Qiagen purified plasmid was put into a total reaction volume of 25 µl Qiagen Hot
 25 Start PCR mix. For *Staphylococcus aureus*, the following primers were used in the PCR reaction:
 pXylT5F: CAGCAGTCTGAGTTATAAAATAG (SEQ ID NO: 78588)
 LexL TGTTTTATCAGACCGCTT (SEQ ID NO: 78589)

Similar methods were conducted for *Salmonella typhimurium* and *Klebsiella pneumoniae*. For *Salmonella typhimurium* and *Klebsiella pneumoniae* the following primers were used:

30 5' - TGTTTTATCAGACCGCTT - 3' (SEQ ID NO: 78589) and
 5'-ACAATTTACACAGCCTC-3' (SEQ ID NO: 78587)

PCR was carried out in a PE GenAmp with the following cycle times:

- Step 1. 95° C 15 min
- Step 2. 94° C 45 sec
- 35 Step 3. 54° C 45 sec
- Step 4. 72° C 1 minute
- Step 5. Return to step 2, 29 times
- Step 6. 72° C 10 minutes

Step 7. 4° C hold

The PCR products were cleaned using Qiagen Qiaquick PCR plates according to the manufacturer's instructions.

For *Pseudomonas aeruginosa*, plasmids from transformant colonies that received a dilution plating score of "2" or greater were isolated to obtain the genomic DNA insert responsible for growth inhibition as follows. *Pseudomonas aeruginosa* were grown in standard laboratory media (LB with carbenicillin at 100 µg/ml or Streptomycin 40 µg/ml to select for the plasmid). Growth was carried out at 30°C overnight in 100 ul culture wells in microtiter plates. To amplify insert DNA 2 ul of culture were placed into 25 ul Qiagen Hot Start PCR mix. PCR reactions were in 96 well microtiter plates. For plasmid pEP5S the following primers were used in the PCR reaction:

T7L1+: GTCGGCGATATAGGCGCCAGCAACCG (SEQ ID NO: 78590)

pStrA3: ATAATCGAGCATGAGTATCATAACG (SEQ ID NO: 78591)

PCR was carried out in a PE GenAmp with the following cycle times:

- Step 1. 95° C 15 min
- Step 2. 94° C 45 sec
- Step 3. 54° C 45 sec
- Step 4. 72° C 1 minute
- Step 5. Return to step 2, 29 times
- Step 6. 72° C 10 minutes
- Step 7. 4° C hold

The PCR products were cleaned using Qiagen Qiaquick PCR plates according to the manufacturer's instructions.

The purified PCR products were then directly cycle sequenced with Qiagen Hot Start PCR mix. The following primers were used in the sequencing reaction:

T7/L2: ATGCGTCCGGCGTAGAGGAT (SEQ ID NO: 78592)

PCR was carried out in a PE GenAmp with the following cycle times:

- Step 1. 94° C 15 min
- Step 2. 96° C 10 sec
- Step 3. 50° C 5 sec
- Step 4. 60 C 4 min
- Step 5. Return to step 2, 24 times
- Step 6. 4° C hold

The PCR products were cleaned using Qiagen Qiaquick PCR plates according to the manufacturer's instructions.

For *E. faecalis*, plasmids from transformant colonies that received a dilution plating score of "2" or greater were isolated to obtain the genomic DNA insert responsible for growth inhibition as follows. *E. faecalis* were grown in THB 10 µg/ml Erm at 30°C overnight in 100 ul culture wells

in microtiter plates. To amplify insert DNA 2 μ l of culture were placed into 25 μ l Qiagen Hot Start PCR mix. PCR reactions were in 96 well microtiter plates. The following primers were used in the PCR reaction:

pXylT5: CAGCAGTCTGAGTTATAAAATAG (SEQ ID NO: 78588) and the

5 pEP/pAK1 primer.

PCR was carried out in a PE GenAmp with the following cycle times:

Step 1. 95° C 15 min

Step 2. 94° C 45 sec

Step 3. 54° C 45 sec

10 Step 4. 72° C 1 minute

Step 5. Return to step 2, 29 times

Step 6. 72° C 10 minutes

Step 7. 4° C hold

The PCR products were cleaned using Qiagen Qiaquick PCR plates according to the manufacturer's
15 instructions.

The purified PCR products were then directly cycle sequenced with Qiagen Hot Start PCR mix. The following primers were used in the PCR reaction:

pXylT5: CAGCAGTCTGAGTTATAAAATAG (SEQ ID NO: 78588)

PCR was carried out in a PE GenAmp with the following cycle times:

20 Step 1. 94° C 15 min

Step 2. 96° C 10 sec

Step 3. 50° C 5 sec

Step 4. 60° C 4 min

Step 5. Return to step 2, 24 times

25 Step 6. 4° C hold

The PCR products were cleaned using Qiagen Qiaquick PCR plates according to the manufacturer's instructions.

The amplified genomic DNA inserts from each of the above procedures were subjected to automated sequencing. Sequence identification numbers (SEQ ID NOs) and clone names for the
30 identified inserts are listed in Table IA and discussed below.

TABLE IA

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
1	E3M10000001B01	1243	P33-1.C22	2485	E1M10000260G02	3727	P1M10000105C04	4969	S1M10000025G06
2	E3M10000001A02	1244	X3S107-17	2486	E1M10000260F04	3728	P1M10000105D04	4970	S1M10000025H06
3	E3M10000001B02	1245	P35-7	2487	E1M10000260A05	3729	P1M10000105C05	4971	S1M10000025H07
4	E3M10000001C02	1246	X3S118-9	2488	E1M10000260C05	3730	P1M10000105B06	4972	S1M10000025A08
5	E3M10000001D02	1247	X3S163-1	2489	E1M10000260E05	3731	P1M10000105C08	4973	S1M10000025D08
6	E3M10000001E02	1248	X3S204-7	2490	E1M10000260C07	3732	P1M10000105H08	4974	S1M10000025F08
7	E3M10000001F02	1249	X3S177-4	2491	E1M10000260G07	3733	P1M10000105D09	4975	S1M10000025H08
8	E3M10000001G02	1250	P342-3	2492	E1M10000260B08	3734	P1M10000110E01	4976	S1M10000025A09
9	E3M10000001H02	1251	SC21.1	2493	E1M10000260D08	3735	P1M10000110F01	4977	S1M10000025B09
10	E3M10000001E03	1252	SC17.1	2494	E1M10000260E08	3736	P1M10000110G01	4978	S1M10000025C09
11	E3M10000001G03	1253	SC13.1	2495	E1M10000260E09	3737	P1M10000110B02	4979	S1M10000025D09
12	E3M10000001H03	1254	MC9.6	2496	E1M10000260C10	3738	P1M10000110B03	4980	S1M10000025E09
13	E3M10000001D04	1255	Z60-P16	2497	E1M10000260D10	3739	P1M10000110F03	4981	S1M10000025F09
14	E3M10000001E04	1256	Z86-121	2498	E1M10000260E10	3740	P1M10000110G03	4982	S1M10000025A10
15	E3M10000001F04	1257	E1M10000109A02	2499	E1M10000260G10	3741	P1M10000110D04	4983	S1M10000025C10
16	E3M10000001G04	1258	E1M10000109A11	2500	E1M10000260H10	3742	P1M10000110F04	4984	S1M10000025D10
17	E3M10000001H04	1259	E1M10000101F05	2501	E1M10000260H11	3743	P1M10000110B05	4985	S1M10000025F10
18	E3M10000001B05	1260	E1M10000101D06	2502	E1M10000260B12	3744	P1M10000110E05	4986	S1M10000025G10
19	E3M10000001D05	1261	E1M10000101A07	2503	E1M10000260D12	3745	P1M10000110B07	4987	S1M10000025H10
20	E3M10000001G05	1262	E1M10000101H07	2504	E1M10000260G12	3746	P1M10000110B08	4988	S1M10000025C11
21	E3M10000001A06	1263	E1M10000101H09	2505	E1M10000261F01	3747	P1M10000110F08	4989	S1M10000025E11
22	E3M10000001F06	1264	E1M10000101C12	2506	E1M10000261B02	3748	P1M10000110A09	4990	S1M10000025B12
23	E3M10000001B08	1265	E1M10000103B04	2507	E1M10000261H02	3749	P1M10000110E09	4991	S1M10000025F12
24	E3M10000001E08	1266	E1M10000103D11	2508	E1M10000261G04	3750	P1M10000110F09	4992	S1M10000026C01
25	E3M10000001C09	1267	E1M10000110G01	2509	E1M10000261H05	3751	P1M10000100F01	4993	S1M10000026E01
26	E3M10000001D09	1268	E1M10000110H01	2510	E1M10000261G06	3752	P1M10000098A02	4994	S1M10000026F01
27	E3M10000001E09	1269	E1M10000110E09	2511	E1M10000261H06	3753	P1M10000098B02	4995	S1M10000026G01
28	E3M10000001B10	1270	E1M10000110A12	2512	E1M10000261D08	3754	P1M10000098A03	4996	S1M10000026H01
29	E3M10000004D01	1271	E1M10000112F05	2513	E1M10000261F08	3755	P1M10000098D03	4997	S1M10000026A02
30	E3M10000004G01	1272	E1M10000113F02	2514	E1M10000261C09	3756	P1M10000098E04	4998	S1M10000026B02
31	E3M10000004D02	1273	E1M10000113A11	2515	E1M10000261H09	3757	P1M10000098G04	4999	S1M10000026H02
32	E3M10000004C03	1274	E1M10000111C03	2516	E1M10000261E10	3758	P1M10000098A05	5000	S1M10000026B03
33	E3M10000004A04	1275	E1M10000111E04	2517	E1M10000262E01	3759	P1M10000098C05	5001	S1M10000026F03

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
34	E3M10000004F08	1276	E1M10000111F09	2518	E1M10000262C02	3760	P1M10000098G06	5002	S1M10000026G03
35	E3M100000004D10	1277	E1M10000115H01	2519	E1M10000262E02	3761	P1M10000098H06	5003	S1M10000026H03
36	E3M100000004F10	1278	E1M10000115G02	2520	E1M10000262F02	3762	P1M10000098C07	5004	S1M10000026A04
37	E3M100000004E11	1279	E1M10000115E03	2521	E1M10000262D03	3763	P1M10000098F07	5005	S1M10000026D04
38	E3M100000004H11	1280	E1M10000115G04	2522	E1M10000262G04	3764	P1M10000098A08	5006	S1M10000026F04
39	E3M100000003B01	1281	E1M10000115C06	2523	E1M10000262C05	3765	P1M10000098G08	5007	S1M10000026G04
40	E3M100000005C01	1282	E1M10000116B01	2524	E1M10000262A06	3766	P1M10000098H09	5008	S1M10000026H04
41	E3M100000003E01	1283	E1M10000106D02	2525	E1M10000262A07	3767	P1M10000098B11	5009	S1M10000026A05
42	E3M100000003E02	1284	E1M10000106G02	2526	E1M10000262E07	3768	P1M10000098C12	5010	S1M10000026B05
43	E3M100000005C03	1285	E1M10000106E04	2527	E1M10000262E08	3769	P1M10000099D01	5011	S1M10000026D05
44	E3M100000005D03	1286	E1M10000106F05	2528	E1M10000262B10	3770	P1M10000099G03	5012	S1M10000026F05
45	E3M100000005E03	1287	E1M10000106H06	2529	E1M10000262H10	3771	P1M10000099A09	5013	S1M10000026G05
46	E3M100000005C04	1288	E1M10000106A08	2530	E1M10000262G11	3772	P1M10000099A10	5014	S1M10000026H05
47	E3M100000005D04	1289	E1M10000106E09	2531	E1M10000262D12	3773	P1M10000099E10	5015	S1M10000026A06
48	E3M100000005H04	1290	E1M10000106G10	2532	E1M10000262G12	3774	P1M10000099F10	5016	S1M10000026B06
49	E3M100000005G05	1291	E1M10000106G11	2533	E1M10000263F01	3775	P1M10000099D11	5017	S1M10000026C06
50	E3M100000005A07	1292	E1M10000106D11	2534	E1M10000263H05	3776	P1M10000106D02	5018	S1M10000026D06
51	E3M100000005F07	1293	E1M10000122B03	2535	E1M10000263C06	3777	P1M10000106F03	5019	S1M10000026F06
52	E3M100000005B08	1294	E1M10000123D05	2536	E1M10000263G06	3778	P1M10000106H03	5020	S1M10000026G06
53	E3M100000005E08	1295	E1M10000123C09	2537	E1M10000263B07	3779	P1M10000106F04	5021	S1M10000026A07
54	E3M100000005D10	1296	E1M10000123E09	2538	E1M10000263F08	3780	P1M10000106D05	5022	S1M10000026B07
55	E3M100000005F10	1297	E1M10000123H10	2539	E1M10000263A10	3781	P1M10000106E07	5023	S1M10000026C07
56	E3M100000006C01	1298	E1M10000123F11	2540	E1M10000263A11	3782	P1M10000107E02	5024	S1M10000026D07
57	E3M100000006G02	1299	E1M10000107B02	2541	E1M10000263H11	3783	P1M10000107H02	5025	S1M10000026F07
58	E3M100000006B03	1300	E1M10000107E02	2542	E1M10000263C12	3784	P1M10000107C03	5026	S1M10000026G07
59	E3M100000006D03	1301	E1M10000107G02	2543	E1M10000263D12	3785	P1M10000107A04	5027	S1M10000026H07
60	E3M100000006F04	1302	E1M10000107B03	2544	E1M10000264B02	3786	P1M10000107C04	5028	S1M10000026A08
61	E3M100000006G04	1303	E1M10000107C03	2545	E1M10000264C02	3787	P1M10000107C09	5029	S1M10000026C08
62	E3M100000006H09	1304	E1M10000107H04	2546	E1M10000264F02	3788	P1M10000107C10	5030	S1M10000026D08
63	E3M100000006E11	1305	E1M10000107G08	2547	E1M10000264D03	3789	P1M10000107D10	5031	S1M10000026F08
64	E3M100000006C12	1306	E1M10000107F09	2548	E1M10000264F03	3790	P1M10000107H10	5032	S1M10000026G08
65	E3M100000006G12	1307	E1M10000107H09	2549	E1M10000264A04	3791	P1M10000108C01	5033	S1M10000026A09
66	E3M100000007F01	1308	E1M10000117C12	2550	E1M10000264B04	3792	P1M10000108A02	5034	S1M10000026E09
67	E3M100000007G01	1309	E1M10000118C04	2551	E1M10000264C04	3793	P1M10000108B02	5035	S1M10000026G09
68	E3M100000007A02	1310	E1M10000118B05	2552	E1M10000264E04	3794	P1M10000108A03	5036	S1M10000026H09
69	E3M100000007B02	1311	E1M10000118C05	2553	E1M10000264F04	3795	P1M10000108D04	5037	S1M10000026A10

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
70	E3M10000007B03	1312	E1M10000118G06	2554	E1M10000264B05	3796	P1M10000108G04	5038	S1M10000026B10
71	E3M10000007C03	1313	E1M10000119D02	2555	E1M10000264B06	3797	P1M10000108E05	5039	S1M10000026D10
72	E3M10000007D03	1314	E1M10000119D03	2556	E1M10000264G09	3798	P1M10000108F05	5040	S1M10000026E10
73	E3M10000007H03	1315	E1M10000119A04	2557	E1M10000264D11	3799	P1M10000108F06	5041	S1M10000026F10
74	E3M10000007C04	1316	E1M10000131H01	2558	E1M10000264F11	3800	P1M10000108G06	5042	S1M10000026G10
75	E3M10000007E05	1317	E1M10000131F04	2559	E1M10000264H11	3801	P1M10000109A02	5043	S1M10000026H10
76	E3M10000007F06	1318	E1M10000131C06	2560	E1M10000264B12	3802	P1M10000109C03	5044	S1M10000026A11
77	E3M10000008E02	1319	E1M10000131B07	2561	E1M10000264C12	3803	P1M10000109E03	5045	S1M10000026B11
78	E3M10000008H02	1320	E1M10000131C07	2562	E1M10000265A02	3804	P1M10000109D04	5046	S1M10000026C11
79	E3M10000008C03	1321	E1M10000131A10	2563	E1M10000265E02	3805	P1M10000109A05	5047	S1M10000026E11
80	E3M10000008G05	1322	E1M10000131G10	2564	E1M10000265G02	3806	P1M10000109B08	5048	S1M10000026B12
81	E3M10000008C08	1323	E1M10000135B02	2565	E1M10000265D04	3807	P1M10000109H09	5049	S1M10000026C12
82	E3M10000008D08	1324	E1M10000132C01	2566	E1M10000265F04	3808	P1M10000109E10	5050	S1M10000026D12
83	E3M10000008C09	1325	E1M10000132F02	2567	E1M10000265E05	3809	P1M10000109F10	5051	S1M10000026E12
84	E3M10000008G09	1326	E1M10000132H04	2568	E1M10000265H05	3810	P1M10000109E11	5052	S1M10000026F12
85	E3M10000009D01	1327	E1M10000132G08	2569	E1M10000265C09	3811	P1M10000109B12	5053	S1M10000026G12
86	E3M10000009E02	1328	E1M10000133A06	2570	E1M10000265E09	3812	S4M10000001C01	5054	S1M10000027G01
87	E3M10000009G02	1329	E1M10000133B08	2571	E1M10000265F09	3813	S4M10000002G04	5055	S1M10000027C02
88	E3M10000009E03	1330	E1M10000133D09	2572	E1M10000265H10	3814	S4M10000002B06	5056	S1M10000027D02
89	E3M10000009E05	1331	E1M10000144B01	2573	E1M10000265A11	3815	S4M10000002G08	5057	S1M10000027E02
90	E3M10000009H06	1332	E1M10000144C02	2574	E1M10000265B11	3816	S4M10000002B09	5058	S1M10000027F02
91	E3M10000009C07	1333	E1M10000144E03	2575	E1M10000265C11	3817	S4M10000019H06	5059	S1M10000027H02
92	E3M10000009C09	1334	E1M10000144F03	2576	E1M10000266D02	3818	S4M10000008H10	5060	S1M10000027D03
93	E3M10000010F01	1335	E1M10000144B06	2577	E1M10000266H02	3819	S4M10000009E03	5061	S1M10000027E03
94	E3M10000010H02	1336	E1M10000144G06	2578	E1M10000266F04	3820	S4M10000009C06	5062	S1M10000027A04
95	E3M10000010D05	1337	E1M10000144G07	2579	E1M10000266H04	3821	S4M10000009E07	5063	S1M10000027C04
96	E3M10000010G07	1338	E1M10000144A08	2580	E1M10000266H05	3822	S4M10000009G08	5064	S1M10000027G04
97	E3M10000010C08	1339	E1M10000144C10	2581	E1M10000266B06	3823	S4M10000009B11	5065	S1M10000027H04
98	E3M10000010G09	1340	E1M10000145E01	2582	E1M10000266F11	3824	S4M10000009F11	5066	S1M10000027A05
99	E3M10000010G10	1341	E1M10000146H01	2583	E1M10000267F01	3825	S4M10000009G11	5067	S1M10000027C05
100	E3M10000011H02	1342	E1M10000146D02	2584	E1M10000267E04	3826	S4M10000010F04	5068	S1M10000027D05
101	E3M10000011B03	1343	E1M10000146E05	2585	E1M10000267A05	3827	S4M10000010H04	5069	S1M10000027E05
102	E3M10000011D03	1344	E1M10000124E02	2586	E1M10000267B05	3828	S4M100000010B05	5070	S1M10000027F05
103	E3M10000011C07	1345	E1M10000124G03	2587	E1M10000267A07	3829	S4M100000010D07	5071	S1M10000027G05
104	E3M10000011A09	1346	E1M10000124G04	2588	E1M10000267H07	3830	S4M100000010D08	5072	S1M10000027H05
105	E3M10000011B09	1347	E1M10000124C05	2589	E1M10000267E09	3831	S4M100000010B09	5073	

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
106	E3M10000012B01	1348	E1M10000124E06	2590	E1M10000267G09	3832	S4M10000010C09	5074	S1M10000027B06
107	E3M10000012C01	1349	E1M10000124D09	2591	E1M10000267H09	3833	S4M10000010D09	5075	S1M10000027C06
108	E3M10000012B02	1350	E1M10000125A02	2592	E1M10000267A10	3834	S4M10000010D10	5076	S1M10000027D06
109	E3M10000012G02	1351	E1M10000125F07	2593	E1M10000267E10	3835	S4M10000011F05	5077	S1M10000027E06
110	E3M10000012F05	1352	E1M10000125F09	2594	E1M10000267C11	3836	S4M10000011D08	5078	S1M10000027F06
111	E3M10000012F06	1353	E1M10000120F01	2595	E1M10000267E11	3837	S4M10000011A09	5079	S1M10000027G06
112	E3M10000012B07	1354	E1M10000120E04	2596	E1M10000267B12	3838	S4M10000011F09	5080	S1M10000027H06
113	E3M10000012F07	1355	E1M10000120E05	2597	E1M10000267E12	3839	S4M10000011E10	5081	S1M10000027B07
114	E3M10000012G07	1356	E1M10000120A06	2598	E1M10000268F03	3840	S4M10000011F10	5082	S1M10000027D07
115	E3M10000012B08	1357	E1M10000120F06	2599	E1M10000268D04	3841	S4M10000011D11	5083	S1M10000027E07
116	E3M10000012D10	1358	E1M10000120A10	2600	E1M10000268E04	3842	S4M10000012H03	5084	S1M10000027G07
117	E3M10000012F10	1359	E1M10000120G10	2601	E1M10000268F06	3843	S4M10000012B06	5085	S1M10000027H07
118	E3M10000013D02	1360	E1M10000136C01	2602	E1M10000268E07	3844	S4M10000012B12	5086	S1M10000027A08
119	E3M10000013E02	1361	E1M10000136H01	2603	E1M10000268A08	3845	S4M10000013D02	5087	S1M10000027B08
120	E3M10000013H03	1362	E1M10000136E02	2604	E1M10000268B08	3846	S4M10000013H02	5088	S1M10000027C08
121	E3M10000013C05	1363	E1M10000136B03	2605	E1M10000268D08	3847	S4M10000014H02	5089	S1M10000027D08
122	E3M10000013F05	1364	E1M10000136D03	2606	E1M10000268G08	3848	S4M10000014B05	5090	S1M10000027E08
123	E3M10000013H05	1365	E1M10000121D01	2607	E1M10000268B09	3849	S4M10000014D07	5091	S1M10000027F08
124	E3M10000013A06	1366	E1M10000121G05	2608	E1M10000268E09	3850	S4M10000015E09	5092	S1M10000027G08
125	E3M10000013A07	1367	E1M10000121F06	2609	E1M10000268F09	3851	S4M10000015B11	5093	S1M10000027H08
126	E3M10000013D08	1368	E1M10000121E07	2610	E1M10000268G09	3852	S4M10000016A02	5094	S1M10000027B09
127	E3M10000013E08	1369	E1M10000121D08	2611	E1M10000268E10	3853	S4M10000020F08	5095	S1M10000027C09
128	E3M10000013D10	1370	E1M10000129G04	2612	E1M10000268A11	3854	S4M10000021E07	5096	S1M10000027D09
129	E3M10000013G10	1371	E1M10000129F10	2613	E1M10000268G11	3855	S4M10000022B02	5097	S1M10000027E09
130	E3M10000014G09	1372	E1M10000129F11	2614	E1M10000268G12	3856	S4M10000022B05	5098	S1M10000027F09
131	E3M10000014B12	1373	E1M10000126E08	2615	E1M10000269D01	3857	S4M10000022G07	5099	S1M10000027G09
132	E3M10000014E12	1374	E1M10000126F12	2616	E1M10000269D02	3858	S4M10000022D12	5100	S1M10000027H09
133	E3M10000015B04	1375	E1M10000127D03	2617	E1M10000269D03	3859	S4M10000022D12	5101	S1M10000027D10
134	E3M10000015B12	1376	E1M10000127C09	2618	E1M10000269D04	3860	S4M10000022E12	5102	S1M10000027H10
135	E3M10000015E12	1377	E1M10000127D09	2619	E1M10000269H04	3861	S4M10000024G01	5103	S1M10000027A11
136	E3M10000016A03	1378	E1M10000137C03	2620	E1M10000269B05	3862	S4M10000024G04	5104	S1M10000027B11
137	E3M10000016D03	1379	E1M10000137C04	2621	E1M10000269D05	3863	S4M10000024C06	5105	S1M10000027D11
138	E3M10000016A04	1380	E1M10000137E07	2622	E1M10000269H05	3864	S4M10000024F08	5106	S1M10000027E11
139	E3M10000016G05	1381	E1M10000137B08	2623	E1M10000269A06	3865	S4M10000024G09	5107	S1M10000027G11
140	E3M10000016H05	1382	E1M10000137G09	2624	E1M10000269E07	3866	S4M10000024C11	5108	S1M10000027H11
141	E3M10000016F06	1383	E1M10000137C11	2625	E1M10000269F07	3867	S4M10000025E02	5109	S1M10000028B01

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
142	E3M10000016F10	1384	E1M10000139B07	2626	E1M10000269E10	3868	S4M10000025E05	5110	S1M10000028E01
143	E3M10000016H10	1385	E1M10000139E10	2627	E1M10000269D11	3869	S4M10000025H07	5111	S1M10000028F01
144	E3M10000017A09	1386	E1M10000139B11	2628	E1M10000269C12	3870	S4M10000025A11	5112	S1M10000028G01
145	E3M10000017D09	1387	E1M10000140B05	2629	E1M10000269G12	3871	S4M10000025F12	5113	S1M10000028A01
146	E3M10000018E01	1388	E1M10000142H03	2630	E1M10000271F02	3872	S4M10000026C01	5114	S1M10000028B02
147	E3M10000018C02	1389	E1M10000142D05	2631	E1M10000271H02	3873	S4M10000026E03	5115	S1M10000028C02
148	E3M10000018H06	1390	E1M10000142F12	2632	E1M10000271E03	3874	S4M10000026D04	5116	S1M10000028G02
149	E3M10000018A07	1391	E1M10000143D03	2633	E1M10000271G03	3875	S4M10000026B10	5117	S1M10000028B03
150	E3M10000018G09	1392	E1M10000143A09	2634	E1M10000271B04	3876	S4M10000026E12	5118	S1M10000028D03
151	E3M10000019D02	1393	E1M10000143G09	2635	E1M10000271G04	3877	S4M10000027E02	5119	S1M10000028E03
152	E3M10000019E03	1394	E1M10000143A12	2636	E1M10000271B05	3878	S4M10000027C10	5120	S1M10000028F03
153	E3M10000019E04	1395	E1M10000147B03	2637	E1M10000271E05	3879	S4M10000029B12	5121	S1M10000028G03
154	E3M10000019B06	1396	E1M10000147D05	2638	E1M10000271C07	3880	S4M10000029D12	5122	S1M10000028H03
155	E3M10000020G04	1397	E1M10000148C02	2639	E1M10000271G07	3881	S4M10000030F06	5123	S1M10000028A04
156	E3M10000020H05	1398	E1M10000148D08	2640	E1M10000271G10	3882	S4M10000030F07	5124	S1M10000028B04
157	E3M10000021C03	1399	E1M10000148B09	2641	E1M10000271F11	3883	S4M10000032F01	5125	S1M10000028C04
158	E3M10000021C04	1400	E1M10000148H09	2642	E1M10000271E12	3884	S4M10000032G01	5126	S1M10000028D04
159	E3M10000021D04	1401	E1M10000155C02	2643	E1M10000271F12	3885	S4M10000032F03	5127	S1M10000028E04
160	E3M10000021G04	1402	E1M10000155F04	2644	E1M10000272F02	3886	S4M10000034A02	5128	S1M10000028F04
161	E3M10000021A08	1403	E1M10000155B05	2645	E1M10000272G03	3887	S4M10000034C05	5129	S1M10000028G04
162	E3M10000021C08	1404	E1M10000155A06	2646	E1M10000272A04	3888	S4M10000034H05	5130	S1M10000028B05
163	E3M10000021B10	1405	E1M10000155C06	2647	E1M10000272F05	3889	S4M10000034A06	5131	S1M10000028C05
164	E3M10000021E10	1406	E1M10000155B11	2648	E1M10000272A06	3890	S4M10000034A09	5132	S1M10000028D05
165	E3M10000021G10	1407	E1M10000155F12	2649	E1M10000272B06	3891	S4M10000034H09	5133	S1M10000028F05
166	E3M10000021A11	1408	E1M10000152B01	2650	E1M10000272H07	3892	S4M10000035B01	5134	S1M10000028G05
167	E3M10000021G11	1409	E1M10000152G01	2651	E1M10000272B08	3893	S4M10000035D01	5135	S1M10000028H05
168	E3M10000021H11	1410	E1M10000152G03	2652	E1M10000272C08	3894	S4M10000035F02	5136	S1M10000028A06
169	E3M10000022G02	1411	E1M10000152F04	2653	E1M10000272D08	3895	S4M10000035E03	5137	S1M10000028B06
170	E3M10000022A04	1412	E1M10000152H04	2654	E1M10000272G08	3896	S4M10000035B06	5138	S1M10000028C06
171	E3M10000022B04	1413	E1M10000152B05	2655	E1M10000272H08	3897	S4M10000035A09	5139	S1M10000028D06
172	E3M10000022D04	1414	E1M10000152B06	2656	E1M10000272C09	3898	S4M10000036F06	5140	S1M10000028F06
173	E3M10000022B05	1415	E1M10000152C08	2657	E1M10000272D09	3899	S4M10000036B09	5141	S1M10000028G06
174	E3M10000022C05	1416	E1M10000152H08	2658	E1M10000272G09	3900	S4M10000036H11	5142	S1M10000028D07
175	E3M10000022F05	1417	E1M10000152E09	2659	E1M10000272H09	3901	S4M10000037A03	5143	S1M10000028F07
176	E3M10000022C06	1418	E1M10000153H03	2660	E1M10000273E01	3902	S4M10000037A08	5144	S1M10000028H07
177	E3M10000022F06	1419	E1M10000153C04	2661	E1M10000273D02	3903	S4M10000037H09	5145	S1M10000028A08

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
178	E3M10000022B07	1420	E1M10000153E04	2662	E1M10000273E03	3904	S4M10000037E10	5146	S1M10000028B08
179	E3M10000022E08	1421	E1M10000153F05	2663	E1M10000273D05	3905	S4M10000037F10	5147	S1M10000028C08
180	E3M10000022F08	1422	E1M10000153A09	2664	E1M10000273E05	3906	S4M10000033G05	5148	S1M10000028D08
181	E3M10000022C09	1423	E1M10000156D07	2665	E1M10000273G05	3907	S4M10000033F08	5149	S1M10000028E08
182	E3M10000022A11	1424	E1M10000156B08	2666	E1M10000273C07	3908	S4M10000033G09	5150	S1M10000028G08
183	E3M10000022B11	1425	E1M10000156B09	2667	E1M10000273C08	3909	S4M10000033B10	5151	S1M10000028H08
184	E3M10000022G12	1426	E1M10000156G12	2668	E1M10000273G11	3910	S1M10000001D01	5152	S1M10000028B09
185	E3M10000023B02	1427	E1M10000157F01	2669	E1M10000273H11	3911	S1M10000001F01	5153	S1M10000028D09
186	E3M10000023D02	1428	E1M10000157B02	2670	E1M10000273B12	3912	S1M10000001D02	5154	S1M10000028F01
187	E3M10000023F02	1429	E1M10000157C04	2671	E1M10000273G12	3913	S1M10000001E02	5155	S1M10000029G01
188	E3M10000023G02	1430	E1M10000157B09	2672	E1M10000274C01	3914	S1M10000001F02	5156	S1M10000029H01
189	E3M10000023A03	1431	E1M10000160C02	2673	E1M10000274E01	3915	S1M10000001A04	5157	S1M10000029A02
190	E3M10000023C03	1432	E1M10000160F02	2674	E1M10000274G01	3916	S1M10000001E04	5158	S1M10000029B02
191	E3M10000023C04	1433	E1M10000160A03	2675	E1M10000274H05	3917	S1M10000001F04	5159	S1M10000029C02
192	E3M10000023D04	1434	E1M10000160C03	2676	E1M10000274D06	3918	S1M10000001A05	5160	S1M10000029D02
193	E3M10000023E04	1435	E1M10000160H03	2677	E1M10000274F06	3919	S1M10000001D06	5161	S1M10000029E02
194	E3M10000023G04	1436	E1M10000160H05	2678	E1M10000274F07	3920	S1M10000001D07	5162	S1M10000029F02
195	E3M10000023A06	1437	E1M10000160A06	2679	E1M10000274A08	3921	S1M10000001A08	5163	S1M10000029G02
196	E3M10000023B06	1438	E1M10000160D07	2680	E1M10000274D08	3922	S1M10000001F08	5164	S1M10000029A03
197	E3M10000023C06	1439	E1M10000160G07	2681	E1M10000274F08	3923	S1M10000001A09	5165	S1M10000029B03
198	E3M10000023A07	1440	E1M10000160B09	2682	E1M10000274F09	3924	S1M10000001E09	5166	S1M10000029C03
199	E3M10000023E07	1441	E1M10000160C09	2683	E1M10000274D10	3925	S1M10000001F09	5167	S1M10000029G03
200	E3M10000023C08	1442	E1M10000160E09	2684	E1M10000274D11	3926	S1M10000001A10	5168	S1M10000029A04
201	E3M10000023H08	1443	E1M10000160E10	2685	E1M10000274D12	3927	S1M10000001F10	5169	S1M10000029B04
202	E3M10000023A09	1444	E1M10000160B11	2686	E1M10000274G12	3928	S1M10000001G10	5170	S1M10000029F04
203	E3M10000023C09	1445	E1M10000160F11	2687	E1M10000275C01	3929	S1M10000001E11	5171	S1M10000029G04
204	E3M10000023E09	1446	E1M10000162C01	2688	E1M10000275E01	3930	S1M10000002B01	5172	S1M10000029B05
205	E3M10000023F10	1447	E1M10000162A03	2689	E1M10000275B02	3931	S1M10000002D01	5173	S1M10000029C05
206	E3M10000023G10	1448	E1M10000162F03	2690	E1M10000275A03	3932	S1M10000002E01	5174	S1M10000029D05
207	E3M10000024A03	1449	E1M10000162G05	2691	E1M10000275B03	3933	S1M10000002F01	5175	S1M10000029E05
208	E3M10000024A04	1450	E1M10000162H06	2692	E1M10000275G03	3934	S1M10000002A02	5176	S1M10000029G05
209	E3M10000024C06	1451	E1M10000162B08	2693	E1M10000275D04	3935	S1M10000002C02	5177	S1M10000029H05
210	E3M10000024A08	1452	E1M10000162A09	2694	E1M10000275H04	3936	S1M10000002D02	5178	S1M10000029B06
211	E3M10000024B08	1453	E1M10000162F12	2695	E1M10000275C05	3937	S1M10000002E02	5179	S1M10000029H06
212	E3M10000025B01	1454	E1M10000163H01	2696	E1M10000275E05	3938	S1M10000002F02	5180	S1M10000029C07
213	E3M10000025C01	1455	E1M10000163F02	2697	E1M10000275A06	3939	S1M10000002B03	5181	S1M10000029G07

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
214	E3M10000025D01	1456	E1M10000163A04	2698	E1M10000275C06	3940	S1M10000002D03	5182	S1M10000029B08
215	E3M10000025B03	1457	E1M10000163C04	2699	E1M10000275G06	3941	S1M10000002G03	5183	S1M10000029G08
216	E3M10000025C04	1458	E1M10000163B12	2700	E1M10000275A08	3942	S1M10000002B04	5184	S1M10000029H08
217	E3M10000025F04	1459	E1M10000164A02	2701	E1M10000275D08	3943	S1M10000002B05	5185	S1M10000029A09
218	E3M10000025B05	1460	E1M10000164F04	2702	E1M10000275F09	3944	S1M10000002D05	5186	S1M10000029C09
219	E3M10000025C05	1461	E1M10000164H05	2703	E1M10000275D10	3945	S1M10000002G05	5187	S1M10000029D09
220	E3M10000025A06	1462	E1M10000154F03	2704	E1M10000275G11	3946	S1M10000002B06	5188	S1M10000029F09
221	E3M10000025F06	1463	E1M10000154H07	2705	E1M10000275B12	3947	S1M10000002G06	5189	S1M10000029H09
222	E3M10000025C07	1464	E1M10000150E02	2706	E1M10000275C12	3948	S1M10000002D07	5190	S1M10000029A10
223	E3M10000025E07	1465	E1M10000150G05	2707	E1M10000275G12	3949	S1M10000002B07	5191	S1M10000029B10
224	E3M10000025G07	1466	E1M10000151C03	2708	E1M10000276E01	3950	S1M10000002E07	5192	S1M10000029C10
225	E3M10000025C08	1467	E1M10000151C04	2709	E1M10000276F01	3951	S1M10000002F07	5193	S1M10000029D10
226	E3M10000025E08	1468	E1M10000151G10	2710	E1M10000276A03	3952	S1M10000002D08	5194	S1M10000029E10
227	E3M10000025F08	1469	E1M10000159F03	2711	E1M10000276B03	3953	S1M10000002G08	5195	S1M10000029F10
228	E3M10000025C09	1470	E1M10000159F07	2712	E1M10000276A04	3954	S1M10000002A09	5196	S1M10000029H10
229	E3M10000025F09	1471	E1M10000159A09	2713	E1M10000276D04	3955	S1M10000002B09	5197	S1M10000029A11
230	E3M10000025G09	1472	E1M10000159C10	2714	E1M10000276G04	3956	S1M10000002C09	5198	S1M10000029E11
231	E3M10000025B10	1473	E1M10000159C11	2715	E1M10000276H04	3957	S1M10000002E09	5199	S1M10000029F11
232	E3M10000025D10	1474	E1M10000161D04	2716	E1M10000312C01	3958	S1M10000002F09	5200	S1M10000029A12
233	E3M10000025F10	1475	E1M10000161A05	2717	E1M10000312B02	3959	S1M10000002A10	5201	S1M10000029C12
234	E3M10000025C11	1476	E1M10000161E05	2718	E1M10000312D02	3960	S1M10000002C10	5202	S1M10000029D12
235	E3M10000025E11	1477	E1M10000161C06	2719	E1M10000312F03	3961	S1M10000002G10	5203	S1M10000029F12
236	E3M10000025F11	1478	E1M10000171E01	2720	E1M10000312A04	3962	S1M10000002B11	5204	S1M10000029G12
237	E3M10000025E12	1479	E1M10000171E05	2721	E1M10000312D04	3963	S1M10000002C11	5205	S1M10000030B01
238	E3M10000025F12	1480	E1M10000172C01	2722	E1M10000312F04	3964	S1M10000002E11	5206	S1M10000030D01
239	E3M10000027G01	1481	E1M10000172C05	2723	E1M10000312H04	3965	S1M10000002A12	5207	S1M10000030F01
240	E3M10000027A02	1482	E1M10000172C07	2724	E1M10000312E05	3966	S1M10000002C12	5208	S1M10000030H01
241	E3M10000027C02	1483	E1M10000173B01	2725	E1M10000312C06	3967	S1M10000002D12	5209	S1M10000030A02
242	E3M10000027C03	1484	E1M10000173D01	2726	E1M10000312B07	3968	S1M10000002E12	5210	S1M10000030B02
243	E3M10000027D03	1485	E1M10000166G06	2727	E1M10000312G07	3969	S1M10000002F12	5211	S1M10000030C02
244	E3M10000027H03	1486	E1M10000167E03	2728	E1M10000312H07	3970	S1M10000002G12	5212	S1M10000030D02
245	E3M10000027H04	1487	E1M10000167F04	2729	E1M10000312E08	3971	S1M10000003A01	5213	S1M10000030E02
246	E3M10000027D05	1488	E1M10000167G04	2730	E1M10000312D09	3972	S1M10000003E01	5214	S1M10000030H02
247	E3M10000027A07	1489	E1M10000168H01	2731	E1M10000312E09	3973	S1M10000003A02	5215	S1M10000030B03
248	E3M10000027B07	1490	E1M10000168B02	2732	E1M10000312F09	3974	S1M10000003F02	5216	S1M10000030C03
249	E3M10000027H07	1491	E1M10000168F02	2733	E1M10000312G09	3975	S1M10000003A03	5217	S1M10000030D03

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
250	E3M10000027B08	1492	E1M10000168G02	2734	E1M10000312A10	3976	S1M10000003G03	5218	S1M10000030G03
251	E3M10000027C08	1493	E1M10000168A03	2735	E1M10000313E01	3977	S1M10000003A04	5219	S1M10000030H03
252	E3M10000027D08	1494	E1M10000168A04	2736	E1M10000313F01	3978	S1M10000003E04	5220	S1M10000030C04
253	E3M10000027G08	1495	E1M10000169H02	2737	E1M10000313A02	3979	S1M10000003G04	5221	S1M10000030A05
254	E3M10000027A09	1496	E1M10000176C01	2738	E1M10000313D02	3980	S1M10000003A05	5222	S1M10000030B05
255	E3M10000027B09	1497	E1M10000176F01	2739	E1M10000313H02	3981	S1M10000003F05	5223	S1M10000030C05
256	E3M10000027D10	1498	E1M10000184C01	2740	E1M10000313A03	3982	S1M10000003A06	5224	S1M10000030D05
257	E3M10000028B01	1499	E1M10000184G02	2741	E1M10000313D03	3983	S1M10000003B06	5225	S1M10000030G05
258	E3M10000028C01	1500	E1M10000184C06	2742	E1M10000313G03	3984	S1M10000003C06	5226	S1M10000030H05
259	E3M10000028D01	1501	E1M10000184F08	2743	E1M10000313B04	3985	S1M10000003D06	5227	S1M10000030D06
260	E3M10000028E01	1502	E1M10000184G08	2744	E1M10000313D04	3986	S1M10000003F06	5228	S1M10000030E06
261	E3M10000028A02	1503	E1M10000184C09	2745	E1M10000313B05	3987	S1M10000003A07	5229	S1M10000030B07
262	E3M10000028B02	1504	E1M10000184F09	2746	E1M10000313A06	3988	S1M10000003C07	5230	S1M10000030D07
263	E3M10000028C02	1505	E1M10000184F10	2747	E1M10000313F06	3989	S1M10000003E07	5231	S1M10000030G07
264	E3M10000028D02	1506	E1M10000184G12	2748	E1M10000313A07	3990	S1M10000003F07	5232	S1M10000030H07
265	E3M10000028E02	1507	E1M10000185D01	2749	E1M10000313C07	3991	S1M10000003B08	5233	S1M10000030C08
266	E3M10000028A03	1508	E1M10000185A02	2750	E1M10000313F07	3992	S1M10000003D08	5234	S1M10000030F08
267	E3M10000028B03	1509	E1M10000185B03	2751	E1M10000313G07	3993	S1M10000003A09	5235	S1M10000030G08
268	E3M10000028E03	1510	E1M10000186A02	2752	E1M10000313D08	3994	S1M10000003B09	5236	S1M10000030A09
269	E3M10000028F03	1511	E1M10000186F03	2753	E1M10000313F08	3995	S1M10000003E09	5237	S1M10000030B09
270	E3M10000028A04	1512	E1M10000186G03	2754	E1M10000313F09	3996	S1M10000003A10	5238	S1M10000030C09
271	E3M10000028B04	1513	E1M10000186A04	2755	E1M10000313A10	3997	S1M10000003C10	5239	S1M10000030D09
272	E3M10000028C04	1514	E1M10000186A08	2756	E1M10000314F01	3998	S1M10000003D10	5240	S1M10000030F09
273	E3M10000028E04	1515	E1M10000186H10	2757	E1M10000314B02	3999	S1M10000003E10	5241	S1M10000030G09
274	E3M10000028H04	1516	E1M10000186E11	2758	E1M10000314H03	4000	S1M10000003A11	5242	S1M10000030H09
275	E3M10000028A05	1517	E1M10000186G12	2759	E1M10000314A04	4001	S1M10000003E11	5243	S1M10000030A10
276	E3M10000028B05	1518	E1M10000187D01	2760	E1M10000314H04	4002	S1M10000003B12	5244	S1M10000030C10
277	E3M10000028C05	1519	E1M10000187G04	2761	E1M10000314A05	4003	S1M10000003C12	5245	S1M10000030D10
278	E3M10000028D05	1520	E1M10000187D06	2762	E1M10000314B05	4004	S1M10000003F12	5246	S1M10000030F10
279	E3M10000028F05	1521	E1M10000187G06	2763	E1M10000314G05	4005	S1M10000004C01	5247	S1M10000030G10
280	E3M10000028G05	1522	E1M10000187G09	2764	E1M10000314D06	4006	S1M10000004D01	5248	S1M10000030H10
281	E3M10000028A06	1523	E1M10000187A10	2765	E1M10000314F06	4007	S1M10000004F01	5249	S1M10000030A11
282	E3M10000028B06	1524	E1M10000187G10	2766	E1M10000314G09	4008	S1M10000004G01	5250	S1M10000030D11
283	E3M10000028C06	1525	E1M10000187H10	2767	E1M10000314D10	4009	S1M10000004C02	5251	S1M10000030E11
284	E3M10000028D06	1526	E1M10000187F11	2768	E1M10000314G10	4010	S1M10000004F02	5252	S1M10000030G11
285	E3M10000028G06	1527	E1M10000187G11	2769	E1M10000314C11	4011	S1M10000004B03	5253	S1M10000030C12

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
286	E3M10000028B07	1528	E1M10000188B06	2770	E1M10000314E11	4012	S1M10000004D03	5254	S1M10000030E12
287	E3M10000028C07	1529	E1M10000188E07	2771	E1M10000314G11	4013	S1M10000004E03	5255	S1M10000030G12
288	E3M10000028E07	1530	E1M10000188G11	2772	E1M10000314B12	4014	S1M10000004G03	5256	S1M10000031B01
289	E3M10000028F07	1531	E1M10000188B12	2773	E1M10000314C12	4015	S1M10000004A04	5257	S1M10000031H01
290	E3M10000028G07	1532	E1M10000189A04	2774	E1M10000314E12	4016	S1M10000004B04	5258	S1M10000031B02
291	E3M10000028H07	1533	E1M10000189F05	2775	E1M10000315D01	4017	S1M10000004D04	5259	S1M10000031E02
292	E3M10000028A08	1534	E1M10000189H05	2776	E1M10000315G01	4018	S1M10000004E04	5260	S1M10000031F02
293	E3M10000028B08	1535	E1M10000189G10	2777	E1M10000315F03	4019	S1M10000004G05	5261	S1M10000031G02
294	E3M10000028C08	1536	E1M10000189C12	2778	E1M10000315F04	4020	S1M10000004A06	5262	S1M10000031H02
295	E3M10000028D08	1537	E1M10000189F12	2779	E1M10000315C05	4021	S1M10000004C06	5263	S1M10000031A03
296	E3M10000029B01	1538	E1M10000190D01	2780	E1M10000315G05	4022	S1M10000004D06	5264	S1M10000031E03
297	E3M10000029D01	1539	E1M10000190A03	2781	E1M10000315H06	4023	S1M10000004E06	5265	S1M10000031F03
298	E3M10000029E01	1540	E1M10000190D06	2782	E1M10000315G07	4024	S1M10000004F06	5266	S1M10000031G03
299	E3M10000029F01	1541	E1M10000190E07	2783	E1M10000315B08	4025	S1M10000004A07	5267	S1M10000031A04
300	E3M10000029G01	1542	E1M10000190D09	2784	E1M10000315C08	4026	S1M10000004D07	5268	S1M10000031B04
301	E3M10000029A02	1543	E1M10000190D10	2785	E1M10000315F08	4027	S1M10000004E07	5269	S1M10000031C04
302	E3M10000029B02	1544	E1M10000190E11	2786	E1M10000315D09	4028	S1M10000004F07	5270	S1M10000031E04
303	E3M10000029C02	1545	E1M10000191E05	2787	E1M10000315E10	4029	S1M10000004G07	5271	S1M10000031F04
304	E3M10000029H02	1546	E1M10000191G06	2788	E1M10000315G10	4030	S1M10000004B08	5272	S1M10000031G04
305	E3M10000029C03	1547	E1M10000191H06	2789	E1M10000315C12	4031	S1M10000004C08	5273	S1M10000031F05
306	E3M10000029D03	1548	E1M10000191A07	2790	E1M10000315F12	4032	S1M10000004D08	5274	S1M10000031D06
307	E3M10000029E03	1549	E1M10000191E07	2791	E1M10000316D01	4033	S1M10000004F08	5275	S1M10000031G06
308	E3M10000029A04	1550	E1M10000191A09	2792	E1M10000316B02	4034	S1M10000004B09	5276	S1M10000031H06
309	E3M10000029B04	1551	E1M10000191F10	2793	E1M10000316D02	4035	S1M10000004C09	5277	S1M10000031C07
310	E3M10000029C04	1552	E1M10000191F12	2794	E1M10000316E02	4036	S1M10000004F09	5278	S1M10000031D07
311	E3M10000029D04	1553	E1M10000192E03	2795	E1M10000316H04	4037	S1M10000004G09	5279	S1M10000031E07
312	E3M10000029G04	1554	E1M10000192F04	2796	E1M10000316A05	4038	S1M10000004C10	5280	S1M10000031A08
313	E3M10000029H04	1555	E1M10000192A05	2797	E1M10000316F05	4039	S1M10000004D10	5281	S1M10000031D08
314	E3M10000029A05	1556	E1M10000192B05	2798	E1M10000316G05	4040	S1M10000004A11	5282	S1M10000031E08
315	E3M10000029B05	1557	E1M10000192A06	2799	E1M10000316A08	4041	S1M10000004B11	5283	S1M10000031F08
316	E3M10000029C05	1558	E1M10000192B06	2800	E1M10000316H08	4042	S1M10000004C11	5284	S1M10000031C09
317	E3M10000029D05	1559	E1M10000192F06	2801	E1M10000316B09	4043	S1M10000004A12	5285	S1M10000031D09
318	E3M10000029E05	1560	E1M10000192D08	2802	E1M10000316E09	4044	S1M10000004C12	5286	S1M10000031G09
319	E3M10000029F05	1561	E1M10000192B09	2803	E1M10000316E11	4045	S1M10000004D12	5287	S1M10000031H09
320	E3M10000029G05	1562	E1M10000192D10	2804	E1M10000317C01	4046	S1M10000004E12	5288	S1M10000031A10
321	E3M10000029H05	1563	E1M10000192F10	2805	E1M10000317G02	4047	S1M10000004F12	5289	S1M10000031C10

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
322	E3M10000029B06	1564	E1M10000192C11	2806	E1M10000317D03	4048	S1M10000004G12	5290	S1M10000031E10
323	E3M10000029C06	1565	E1M10000192F11	2807	E1M10000317F03	4049	S1M10000005A01	5291	S1M10000031F10
324	E3M10000029D06	1566	E1M10000192B12	2808	E1M10000277D01	4050	S1M10000005C01	5292	S1M10000031G10
325	E3M10000029F06	1567	E1M10000193F01	2809	E1M10000277G01	4051	S1M10000005E01	5293	S1M10000031A11
326	E3M10000029C07	1568	E1M10000193G01	2810	E1M10000277F02	4052	S1M10000005B02	5294	S1M10000031B11
327	E3M10000029E07	1569	E1M10000193A02	2811	E1M10000277G03	4053	S1M10000005D02	5295	S1M10000031C11
328	E3M10000029G07	1570	E1M10000193F02	2812	E1M10000277A05	4054	S1M10000005E02	5296	S1M10000031F11
329	E3M10000029H07	1571	E1M10000193D04	2813	E1M10000277E05	4055	S1M10000005F02	5297	S1M10000031G11
330	E3M10000029B08	1572	E1M10000193G05	2814	E1M10000277C07	4056	S1M10000005A03	5298	S1M10000031H11
331	E3M10000029C08	1573	E1M10000193C06	2815	E1M10000277E07	4057	S1M10000005D03	5299	S1M10000031B12
332	E3M10000029D08	1574	E1M10000193F06	2816	E1M10000277G07	4058	S1M10000005F03	5300	S1M10000031C12
333	E3M10000029E08	1575	E1M10000193B07	2817	E1M10000277A08	4059	S1M10000005B04	5301	S1M10000031E12
334	E3M10000029G08	1576	E1M10000193C07	2818	E1M10000277C08	4060	S1M10000005D04	5302	S1M10000031F12
335	E3M10000029H08	1577	E1M10000193F07	2819	E1M10000277B10	4061	S1M10000005F04	5303	S1M10000032B01
336	E3M10000029C09	1578	E1M10000193C08	2820	E1M10000277G10	4062	S1M10000005C05	5304	S1M10000032C01
337	E3M10000029E09	1579	E1M10000193D08	2821	E1M10000277B11	4063	S1M10000005D05	5305	S1M10000032F01
338	E3M10000029F09	1580	E1M10000193B10	2822	E1M10000278G01	4064	S1M10000005E05	5306	S1M10000032H01
339	E3M10000029G09	1581	E1M10000193C10	2823	E1M10000278G02	4065	S1M10000005C06	5307	S1M10000032E02
340	E3M10000029A10	1582	E1M10000193G10	2824	E1M10000278B04	4066	S1M10000005D06	5308	S1M10000032G02
341	E3M10000029C10	1583	E1M10000193H11	2825	E1M10000278H06	4067	S1M10000005A07	5309	S1M10000032A03
342	E3M10000029E10	1584	E1M10000193G12	2826	E1M10000278A07	4068	S1M10000005B07	5310	S1M10000032C03
343	E3M10000029F10	1585	E1M10000194B03	2827	E1M10000278C07	4069	S1M10000005D07	5311	S1M10000032D03
344	E3M10000029G10	1586	E1M10000194F03	2828	E1M10000278C08	4070	S1M10000005A08	5312	S1M10000032E03
345	E3M10000029B11	1587	E1M10000194H03	2829	E1M10000278H10	4071	S1M10000005B08	5313	S1M10000032G03
346	E3M10000029G11	1588	E1M10000194D04	2830	E1M10000278B11	4072	S1M10000005D08	5314	S1M10000032C04
347	E3M10000029H11	1589	E1M10000194D05	2831	E1M10000278H11	4073	S1M10000005E08	5315	S1M10000032E04
348	E3M10000029B12	1590	E1M10000194F06	2832	E1M10000279G03	4074	S1M10000005B09	5316	S1M10000032F04
349	E3M10000029C12	1591	E1M10000194G06	2833	E1M10000279C05	4075	S1M10000005C09	5317	S1M10000032G04
350	E3M10000029D12	1592	E1M10000194H06	2834	E1M10000279G05	4076	S1M10000005D09	5318	S1M10000032H04
351	E3M10000029E12	1593	E1M10000194B07	2835	E1M10000279E07	4077	S1M10000005A10	5319	S1M10000032A05
352	E3M10000029F12	1594	E1M10000194H07	2836	E1M10000279H07	4078	S1M10000005A11	5320	S1M10000032B05
353	E3M10000029G12	1595	E1M10000194B08	2837	E1M10000279F08	4079	S1M10000005C11	5321	S1M10000032C05
354	E3M10000030E01	1596	E1M10000194G08	2838	E1M10000279A09	4080	S1M10000005D11	5322	S1M10000032F05
355	E3M10000030F01	1597	E1M10000194F09	2839	E1M10000279B09	4081	S1M10000005E11	5323	S1M10000032H05
356	E3M10000030G01	1598	E1M10000194B10	2840	E1M10000279C10	4082	S1M10000005B12	5324	S1M10000032A06
357	E3M10000030D02	1599	E1M10000194A11	2841	E1M10000279D10	4083	S1M10000005D12	5325	S1M10000032D06

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
338	E3M10000030E02	1600	E1M10000194F11	2842	E1M10000279E12	4084	S1M10000006F01	5326	S1M10000032E06
339	E3M10000030B03	1601	E1M10000194C12	2843	E1M10000280C01	4085	S1M10000006B02	5327	S1M10000032G06
360	E3M10000030C03	1602	E1M10000194G12	2844	E1M10000280G01	4086	S1M10000006E02	5328	S1M10000032A07
361	E3M10000030G03	1603	E1M10000195G02	2845	E1M10000280B02	4087	S1M10000006F02	5329	S1M10000032B07
362	E3M10000030H03	1604	E1M10000195B03	2846	E1M10000280C03	4088	S1M10000006G02	5330	S1M10000032C07
363	E3M10000030B04	1605	E1M10000195G03	2847	E1M10000280C05	4089	S1M10000006A03	5331	S1M10000032D07
364	E3M10000030C04	1606	E1M10000195A04	2848	E1M10000280E05	4090	S1M10000006B03	5332	S1M10000032F07
365	E3M10000030E04	1607	E1M10000195G05	2849	E1M10000280A06	4091	S1M10000006D03	5333	S1M10000032H07
366	E3M10000030F04	1608	E1M10000195D06	2850	E1M10000280B06	4092	S1M10000006E03	5334	S1M10000032A08
367	E3M10000030H04	1609	E1M10000195E07	2851	E1M10000280H06	4093	S1M10000006F03	5335	S1M10000032B08
368	E3M10000030A05	1610	E1M10000195A08	2852	E1M10000280A07	4094	S1M10000006G03	5336	S1M10000032D08
369	E3M10000030B05	1611	E1M10000195E09	2853	E1M10000280C07	4095	S1M10000006A04	5337	S1M10000032E08
370	E3M10000030D05	1612	E1M10000195D10	2854	E1M10000280G07	4096	S1M10000006B04	5338	S1M10000032G08
371	E3M10000030E05	1613	E1M10000195E10	2855	E1M10000280E08	4097	S1M10000006C04	5339	S1M10000032B09
372	E3M10000030B06	1614	E1M10000195D11	2856	E1M10000280F08	4098	S1M10000006E04	5340	S1M10000032C09
373	E3M10000030D06	1615	E1M10000195F11	2857	E1M10000280C09	4099	S1M10000006F04	5341	S1M10000032D09
374	E3M10000030F06	1616	E1M10000196B02	2858	E1M10000280H09	4100	S1M10000006G04	5342	S1M10000032E09
375	E3M10000030G06	1617	E1M10000196C02	2859	E1M10000280C10	4101	S1M10000006A05	5343	S1M10000032H09
376	E3M10000030H06	1618	E1M10000196E02	2860	E1M10000280C11	4102	S1M10000006D05	5344	S1M10000032A10
377	E3M10000030B07	1619	E1M10000196G02	2861	E1M10000280D11	4103	S1M10000006G05	5345	S1M10000032B10
378	E3M10000030F07	1620	E1M10000196A03	2862	E1M10000280H11	4104	S1M10000006C06	5346	S1M10000032C10
379	E3M10000030H07	1621	E1M10000196D03	2863	E1M10000280F12	4105	S1M10000006D06	5347	S1M10000032E10
380	E3M10000030A08	1622	E1M10000196A04	2864	E1M10000281B01	4106	S1M10000006F06	5348	S1M10000032F10
381	E3M10000030B08	1623	E1M10000196D05	2865	E1M10000281C02	4107	S1M10000006G06	5349	S1M10000032G10
382	E3M10000030D08	1624	E1M10000196E05	2866	E1M10000281C03	4108	S1M10000006A07	5350	S1M10000032B11
383	E3M10000030E08	1625	E1M10000196F05	2867	E1M10000281D04	4109	S1M10000006B07	5351	S1M10000032C11
384	E3M10000030G08	1626	E1M10000196D06	2868	E1M10000281E07	4110	S1M10000006C07	5352	S1M10000032D11
385	E3M10000030H08	1627	E1M10000196F06	2869	E1M10000281E08	4111	S1M10000006D07	5353	S1M10000032E11
386	E3M10000030A09	1628	E1M10000196H06	2870	E1M10000281H09	4112	S1M10000006E07	5354	S1M10000032F11
387	E3M10000030D09	1629	E1M10000196H07	2871	E1M10000281B10	4113	S1M10000006G07	5355	S1M10000032H11
388	E3M10000030E09	1630	E1M10000196C08	2872	E1M10000281D11	4114	S1M10000006A08	5356	S1M10000032B12
389	E3M10000030G09	1631	E1M10000196A10	2873	E1M10000281G11	4115	S1M10000006E08	5357	S1M10000032C12
390	E3M10000030B10	1632	E1M10000196B10	2874	E1M10000281D12	4116	S1M10000006A10	5358	S1M10000032E12
391	E3M10000030D10	1633	E1M10000196D11	2875	E1M10000281F12	4117	S1M10000006B10	5359	S1M10000032F12
392	E3M10000030E10	1634	E1M10000196D12	2876	E1M10000282D01	4118	S1M10000006C10	5360	S1M10000032G12
393	E3M10000030F10	1635	E1M10000197E02	2877	E1M10000282F01	4119	S1M10000006G10	5361	S1M10000033H01

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
394	E3M10000030H10	1636	E1M10000197G02	2878	E1M10000282D02	4120	S1M10000006B11	5362	S1M10000033A02
395	E3M10000030A11	1637	E1M10000197A03	2879	E1M10000282A03	4121	S1M10000006G11	5363	S1M10000033B02
396	E3M10000030B11	1638	E1M10000197D04	2880	E1M10000282F03	4122	S1M10000006A12	5364	S1M10000033D02
397	E3M10000030H11	1639	E1M10000197B05	2881	E1M10000282C04	4123	S1M10000006B12	5365	S1M10000033F02
398	E3M10000030B12	1640	E1M10000197E07	2882	E1M10000282E04	4124	S1M10000007F01	5366	S1M10000033H02
399	E3M10000030C12	1641	E1M10000197E08	2883	E1M10000282F04	4125	S1M10000007B02	5367	S1M10000033D03
400	E3M10000030D12	1642	E1M10000197H08	2884	E1M10000282H04	4126	S1M10000007F02	5368	S1M10000033F03
401	E3M10000030F12	1643	E1M10000197D09	2885	E1M10000282B05	4127	S1M10000007G02	5369	S1M10000033H03
402	E3M10000030G12	1644	E1M10000197D10	2886	E1M10000282F05	4128	S1M10000007A03	5370	S1M10000033C04
403	E3M10000031C01	1645	E1M10000197E10	2887	E1M10000282H05	4129	S1M10000007D03	5371	S1M10000033D04
404	E3M10000031A02	1646	E1M10000197F10	2888	E1M10000282A08	4130	S1M10000007G03	5372	S1M10000033E04
405	E3M10000031B02	1647	E1M10000197G10	2889	E1M10000282B08	4131	S1M10000007C04	5373	S1M10000033D05
406	E3M10000031F02	1648	E1M10000197H10	2890	E1M10000282D08	4132	S1M10000007E04	5374	S1M10000033G05
407	E3M10000031B03	1649	E1M10000197A11	2891	E1M10000282E08	4133	S1M10000007F04	5375	S1M10000033D06
408	E3M10000031D03	1650	E1M10000197C11	2892	E1M10000282F08	4134	S1M10000007C05	5376	S1M10000033F06
409	E3M10000031E03	1651	E1M10000197B12	2893	E1M10000282G08	4135	S1M10000007G05	5377	S1M10000033A07
410	E3M10000031G03	1652	E1M10000198C02	2894	E1M10000282H08	4136	S1M10000007C06	5378	S1M10000033B07
411	E3M10000031B04	1653	E1M10000198B03	2895	E1M10000282A09	4137	S1M10000007D06	5379	S1M10000033F07
412	E3M10000031C04	1654	E1M10000198E04	2896	E1M10000282C09	4138	S1M10000007E06	5380	S1M10000033G07
413	E3M10000031D04	1655	E1M10000198F04	2897	E1M10000282C11	4139	S1M10000007C07	5381	S1M10000033H07
414	E3M10000031E04	1656	E1M10000198A05	2898	E1M10000282D11	4140	S1M10000007E07	5382	S1M10000033A08
415	E3M10000031F04	1657	E1M10000198H05	2899	E1M10000282C12	4141	S1M10000007G07	5383	S1M10000033B08
416	E3M10000031G04	1658	E1M10000198D06	2900	E1M10000282E12	4142	S1M10000007C08	5384	S1M10000033H08
417	E3M10000031G05	1659	E1M10000198F06	2901	E1M10000282G12	4143	S1M10000007E08	5385	S1M10000033F09
418	E3M10000031H05	1660	E1M10000198H06	2902	E1M10000283D01	4144	S1M10000007F08	5386	S1M10000033G09
419	E3M10000031A06	1661	E1M10000198B09	2903	E1M10000283E01	4145	S1M10000007F09	5387	S1M10000033H09
420	E3M10000031C06	1662	E1M10000198C09	2904	E1M10000283A02	4146	S1M10000007D10	5388	S1M10000033A10
421	E3M10000031G06	1663	E1M10000198G09	2905	E1M10000283B02	4147	S1M10000007F10	5389	S1M10000033D10
422	E3M10000031H06	1664	E1M10000198C10	2906	E1M10000283H03	4148	S1M10000007B11	5390	S1M10000033E10
423	E3M10000031A07	1665	E1M10000198C12	2907	E1M10000283B04	4149	S1M10000007D11	5391	S1M10000033G10
424	E3M10000031E07	1666	E1M10000199F02	2908	E1M10000283B05	4150	S1M10000008F01	5392	S1M10000033H10
425	E3M10000031F07	1667	E1M10000199A05	2909	E1M10000283G05	4151	S1M10000008F02	5393	S1M10000033B11
426	E3M10000031G07	1668	E1M10000199G05	2910	E1M10000283A06	4152	S1M10000008G02	5394	S1M10000033F11
427	E3M10000031H07	1669	E1M10000199A06	2911	E1M10000283F06	4153	S1M10000008A03	5395	S1M10000033G11
428	E3M10000031A08	1670	E1M10000199C06	2912	E1M10000283A07	4154	S1M10000008B03	5396	S1M10000033H11
429	E3M10000031D08	1671	E1M10000199C08	2913	E1M10000283G07	4155	S1M10000008F03	5397	S1M10000033B12

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
430	E3M10000031G08	1672	E1M10000199E08	2914	E1M10000283A08	4156	S1M10000008G03	5398	S1M10000033D12
431	E3M10000031H08	1673	E1M10000199C09	2915	E1M10000283E08	4157	S1M10000008A04	5399	S1M10000033E12
432	E3M10000031B09	1674	E1M10000199G09	2916	E1M10000283F08	4158	S1M10000008B04	5400	S1M10000033G12
433	E3M10000031E09	1675	E1M10000199H09	2917	E1M10000283B10	4159	S1M10000008D05	5401	S1M10000034B01
434	E3M10000031F09	1676	E1M10000199B10	2918	E1M10000283H10	4160	S1M10000008E05	5402	S1M10000034D01
435	E3M10000031B10	1677	E1M10000199D10	2919	E1M10000283B11	4161	S1M10000008G05	5403	S1M10000034E01
436	E3M10000031C10	1678	E1M10000199F10	2920	E1M10000283E12	4162	S1M10000008B06	5404	S1M10000034F01
437	E3M10000031H10	1679	E1M10000199D11	2921	E1M10000302F01	4163	S1M10000008F06	5405	S1M10000034H01
438	E3M10000031B11	1680	E1M10000199E11	2922	E1M10000302G03	4164	S1M10000008A08	5406	S1M10000034A02
439	E3M10000031C11	1681	E1M10000199F11	2923	E1M10000302A05	4165	S1M10000008B08	5407	S1M10000034C02
440	E3M10000031F11	1682	E1M10000199B12	2924	E1M10000302C05	4166	S1M10000008C08	5408	S1M10000034E02
441	E3M10000031G11	1683	E1M10000199D12	2925	E1M10000302H07	4167	S1M10000008E08	5409	S1M10000034F02
442	E3M10000031H11	1684	E1M10000200G01	2926	E1M10000302C09	4168	S1M10000008F08	5410	S1M10000034G02
443	E3M10000031B12	1685	E1M10000200A01	2927	E1M10000302F10	4169	S1M10000008A09	5411	S1M10000034H02
444	E3M10000031C12	1686	E1M10000200B02	2928	E1M10000302H11	4170	S1M10000008B09	5412	S1M10000034B03
445	E3M10000032C01	1687	E1M10000200C02	2929	E1M10000303C01	4171	S1M10000008C09	5413	S1M10000034F03
446	E3M10000032D01	1688	E1M10000200A03	2930	E1M10000303A02	4172	S1M10000008E09	5414	S1M10000034G03
447	E3M10000032F01	1689	E1M10000200D03	2931	E1M10000303D02	4173	S1M10000008F09	5415	S1M10000034H03
448	E3M10000032G01	1690	E1M10000200B04	2932	E1M10000303A03	4174	S1M10000008B10	5416	S1M10000034A04
449	E3M10000032A02	1691	E1M10000200F04	2933	E1M10000303B03	4175	S1M10000008E10	5417	S1M10000034E04
450	E3M10000032C02	1692	E1M10000200C07	2934	E1M10000303H03	4176	S1M10000008F10	5418	S1M10000034F04
451	E3M10000032D02	1693	E1M10000200G07	2935	E1M10000303F04	4177	S1M10000008F11	5419	S1M10000034A05
452	E3M10000032F02	1694	E1M10000200D08	2936	E1M10000303B05	4178	S1M10000008A12	5420	S1M10000034B05
453	E3M10000032G02	1695	E1M10000200A09	2937	E1M10000303C05	4179	S1M10000009B01	5421	S1M10000034D05
454	E3M10000032B03	1696	E1M10000200B09	2938	E1M10000303F06	4180	S1M10000009C01	5422	S1M10000034E05
455	E3M10000032C03	1697	E1M10000200E10	2939	E1M10000303B07	4181	S1M10000009D01	5423	S1M10000034F05
456	E3M10000032D03	1698	E1M10000201G01	2940	E1M10000303F07	4182	S1M10000009F01	5424	S1M10000034A06
457	E3M10000032F03	1699	E1M10000201A02	2941	E1M10000303A08	4183	S1M10000009H01	5425	S1M10000034B06
458	E3M10000032A04	1700	E1M10000201B02	2942	E1M10000303F08	4184	S1M10000009A02	5426	S1M10000034C06
459	E3M10000032B04	1701	E1M10000201C02	2943	E1M10000303D11	4185	S1M10000009B02	5427	S1M10000034D06
460	E3M10000032E04	1702	E1M10000201E03	2944	E1M10000303D12	4186	S1M10000009C02	5428	S1M10000034E06
461	E3M10000032G04	1703	E1M10000201H03	2945	E1M10000304G01	4187	S1M10000009D02	5429	S1M10000034G06
462	E3M10000032B05	1704	E1M10000201D06	2946	E1M10000304H02	4188	S1M10000009E02	5430	S1M10000034H06
463	E3M10000032E05	1705	E1M10000201G06	2947	E1M10000304A03	4189	S1M10000009F02	5431	S1M10000034B07
464	E3M10000032F05	1706	E1M10000201H07	2948	E1M10000304C03	4190	S1M10000009G02	5432	S1M10000034C07
465	E3M10000032G05	1707	E1M10000201G08	2949	E1M10000304E03	4191	S1M10000009H02	5433	S1M10000034D07

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
466	E3M10000032H05	1708	E1M10000201F09	2950	E1M10000304F03	4192	S1M10000009B03	5434	S1M10000034E07
467	E3M10000032A06	1709	E1M10000201G09	2951	E1M10000304E05	4193	S1M10000009D03	5435	S1M10000034F07
468	E3M10000032C06	1710	E1M10000201H09	2952	E1M10000304G05	4194	S1M10000009F03	5436	S1M10000034G07
469	E3M10000032D06	1711	E1M10000201A10	2953	E1M10000304A06	4195	S1M10000009G03	5437	S1M10000034H07
470	E3M10000032G06	1712	E1M10000201G10	2954	E1M10000304F06	4196	S1M10000009H03	5438	S1M10000034A08
471	E3M10000032H06	1713	E1M10000201F12	2955	E1M10000304A08	4197	S1M10000009A04	5439	S1M10000034B08
472	E3M10000032A07	1714	E1M10000202C02	2956	E1M10000304B10	4198	S1M10000009B04	5440	S1M10000034D08
473	E3M10000032F07	1715	E1M10000202A05	2957	E1M10000305E01	4199	S1M10000009D04	5441	S1M10000034F08
474	E3M10000032G07	1716	E1M10000202C08	2958	E1M10000305C02	4200	S1M10000009B05	5442	S1M10000034G08
475	E3M10000032A08	1717	E1M10000202H08	2959	E1M10000305G04	4201	S1M10000009C05	5443	S1M10000034H08
476	E3M10000032B08	1718	E1M10000202C09	2960	E1M10000305G09	4202	S1M10000009D05	5444	S1M10000034A09
477	E3M10000032F08	1719	E1M10000202B10	2961	E1M10000305C10	4203	S1M10000009F05	5445	S1M10000034B09
478	E3M10000032H08	1720	E1M10000203D02	2962	E1M10000305B11	4204	S1M10000009G05	5446	S1M10000034C09
479	E3M10000032A09	1721	E1M10000203G04	2963	E1M10000305C11	4205	S1M10000009H05	5447	S1M10000034F09
480	E3M10000032C09	1722	E1M10000203C05	2964	E1M10000306C01	4206	S1M10000009B06	5448	S1M10000034G09
481	E3M10000032D09	1723	E1M10000203A08	2965	E1M10000306A03	4207	S1M10000009C06	5449	S1M10000034H09
482	E3M10000032H09	1724	E1M10000203F09	2966	E1M10000306G03	4208	S1M10000009E06	5450	S1M10000034B10
483	E3M10000032A10	1725	E1M10000203F10	2967	E1M10000306E04	4209	S1M10000009F06	5451	S1M10000034D10
484	E3M10000032E10	1726	E1M10000203E11	2968	E1M10000306H04	4210	S1M10000009G06	5452	S1M10000034E10
485	E3M10000032H10	1727	E1M10000203C12	2969	E1M10000306C05	4211	S1M10000009A07	5453	S1M10000034F10
486	E3M10000032A11	1728	E1M10000204E02	2970	E1M10000306H07	4212	S1M10000009B07	5454	S1M10000034H10
487	E3M10000032B11	1729	E1M10000204F02	2971	E1M10000306D09	4213	S1M10000009C07	5455	S1M10000034A11
488	E3M10000032C11	1730	E1M10000204E03	2972	E1M10000306H09	4214	S1M10000009D07	5456	S1M10000034D11
489	E3M10000032E11	1731	E1M10000204F03	2973	E1M10000306E11	4215	S1M10000009F07	5457	S1M10000034E11
490	E3M10000032F11	1732	E1M10000204B05	2974	E1M10000307G01	4216	S1M10000009G07	5458	S1M10000034G11
491	E3M10000032B12	1733	E1M10000204A06	2975	E1M10000307C02	4217	S1M10000009H07	5459	S1M10000034A12
492	E3M10000032C12	1734	E1M10000204A07	2976	E1M10000307D02	4218	S1M10000009A08	5460	S1M10000034B12
493	E3M10000032D12	1735	E1M10000204G07	2977	E1M10000307E03	4219	S1M10000009C08	5461	S1M10000034C12
494	E3M10000032E12	1736	E1M10000204E09	2978	E1M10000307B04	4220	S1M10000009E08	5462	S1M10000034D12
495	E3M10000032F12	1737	E1M10000204D10	2979	E1M10000307C04	4221	S1M10000009A09	5463	S1M10000034E12
496	E3M10000033B01	1738	E1M10000204H10	2980	E1M10000307E04	4222	S1M10000009C09	5464	S1M10000034F12
497	E3M10000033C01	1739	E1M10000204C12	2981	E1M10000307B05	4223	S1M10000009D09	5465	S1M10000034G12
498	E3M10000033D01	1740	E1M10000205F02	2982	E1M10000307C05	4224	S1M10000009E09	5466	S1M10000035B01
499	E3M10000033F01	1741	E1M10000205G03	2983	E1M10000307D05	4225	S1M10000009F09	5467	S1M10000035C01
500	E3M10000033B02	1742	E1M10000205D08	2984	E1M10000307E05	4226	S1M10000009G09	5468	S1M10000035D01
501	E3M10000033C02	1743	E1M10000205B10	2985	E1M10000307F05	4227	S1M10000009H09	5469	S1M10000035H01

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
502	E3M10000033E02	1744	E1M10000205F11	2986	E1M10000307A06	4228	S1M10000009A10	5470	S1M10000035C02
503	E3M10000033F02	1745	E1M10000205G11	2987	E1M10000307F06	4229	S1M10000009B10	5471	S1M10000035E02
504	E3M10000033G02	1746	E1M10000205H11	2988	E1M10000307H06	4230	S1M10000009C10	5472	S1M10000035G02
505	E3M10000033H02	1747	E1M10000205G12	2989	E1M10000307B07	4231	S1M10000009F10	5473	S1M10000035A03
506	E3M10000033A03	1748	E1M10000206B03	2990	E1M10000307C07	4232	S1M10000009G10	5474	S1M10000035B03
507	E3M10000033E03	1749	E1M10000206A04	2991	E1M10000307G07	4233	S1M10000009A11	5475	S1M10000035E03
508	E3M10000033F03	1750	E1M10000206D04	2992	E1M10000307F08	4234	S1M10000009B11	5476	S1M10000035F03
509	E3M10000033G03	1751	E1M10000206B05	2993	E1M10000307C09	4235	S1M10000009C11	5477	S1M10000035B04
510	E3M10000033A04	1752	E1M10000206G05	2994	E1M10000307A10	4236	S1M10000009D11	5478	S1M10000035C04
511	E3M10000033B04	1753	E1M10000206H05	2995	E1M10000307E10	4237	S1M10000009E11	5479	S1M10000035D04
512	E3M10000033D04	1754	E1M10000206A06	2996	E1M10000307F10	4238	S1M10000009G11	5480	S1M10000035E04
513	E3M10000033E04	1755	E1M10000206B06	2997	E1M10000307H10	4239	S1M10000009H11	5481	S1M10000035F04
514	E3M10000033F04	1756	E1M10000206F06	2998	E1M10000307A11	4240	S1M10000009B12	5482	S1M10000035C06
515	E3M10000033G04	1757	E1M10000206C09	2999	E1M10000307D11	4241	S1M10000009E12	5483	S1M10000035D06
516	E3M10000033H04	1758	E1M10000206E09	3000	E1M10000307G11	4242	S1M10000009G12	5484	S1M10000035H07
517	E3M10000033A05	1759	E1M10000206F09	3001	E1M10000307C12	4243	S1M10000011B01	5485	S1M10000035A08
518	E3M10000033B05	1760	E1M10000207E01	3002	E1M10000307E12	4244	S1M10000011C01	5486	S1M10000035B08
519	E3M10000033C05	1761	E1M10000207B03	3003	E1M10000307G12	4245	S1M10000011D01	5487	S1M10000035E08
520	E3M10000033D05	1762	E1M10000207E05	3004	E1M10000308C01	4246	S1M10000011E01	5488	S1M10000035H08
521	E3M10000033E05	1763	E1M10000207G05	3005	E1M10000308A02	4247	S1M10000011F01	5489	S1M10000035A09
522	E3M10000033F05	1764	E1M10000207C06	3006	E1M10000308B02	4248	S1M10000011G01	5490	S1M10000035D09
523	E3M10000033H05	1765	E1M10000207H06	3007	E1M10000308F02	4249	S1M10000011H01	5491	S1M10000035E09
524	E3M10000033A06	1766	E1M10000207F07	3008	E1M10000308H04	4250	S1M10000011A02	5492	S1M10000035F09
525	E3M10000033B06	1767	E1M10000207G07	3009	E1M10000308B05	4251	S1M10000011B02	5493	S1M10000035G09
526	E3M10000033D06	1768	E1M10000207C10	3010	E1M10000308E05	4252	S1M10000011D02	5494	S1M10000035H09
527	E3M10000033G06	1769	E1M10000207D12	3011	E1M10000308F06	4253	S1M10000011E02	5495	S1M10000035A10
528	E3M10000033A07	1770	E1M10000207G12	3012	E1M10000308B07	4254	S1M10000011H02	5496	S1M10000035H10
529	E3M10000033E07	1771	E1M10000208A04	3013	E1M10000308C07	4255	S1M10000011A03	5497	S1M10000035A11
530	E3M10000033F07	1772	E1M10000208A05	3014	E1M10000308A08	4256	S1M10000011B03	5498	S1M10000035B11
531	E3M10000033G07	1773	E1M10000208B05	3015	E1M10000308C08	4257	S1M10000011C03	5499	S1M10000035C11
532	E3M10000033H07	1774	E1M10000208B06	3016	E1M10000308D08	4258	S1M10000011E03	5500	S1M10000035G11
533	E3M10000033A08	1775	E1M10000208C06	3017	E1M10000308G09	4259	S1M10000011F03	5501	S1M10000035H11
534	E3M10000033B08	1776	E1M10000208B07	3018	E1M10000308H09	4260	S1M10000011G03	5502	S1M10000035A12
535	E3M10000033E08	1777	E1M10000208H07	3019	E1M10000308E10	4261	S1M10000011H03	5503	S1M10000035D12
536	E3M10000033F08	1778	E1M10000208F08	3020	E1M10000286D01	4262	S1M10000011A04	5504	S1M10000035E12
537	E3M10000033G08	1779	E1M10000208H10	3021	E1M10000286B02	4263	S1M10000011B04	5505	S1M10000035G12

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
538	E3M10000033H08	1780	E1M10000208D11	3022	E1M10000286G02	4264	S1M10000011D04	5506	S1M10000036C01
539	E3M10000033B09	1781	E1M10000209B01	3023	E1M10000286H02	4265	S1M10000011E04	5507	S1M10000036H01
540	E3M10000033C09	1782	E1M10000209F02	3024	E1M10000286A03	4266	S1M10000011F04	5508	S1M10000036A02
541	E3M10000033D09	1783	E1M10000209H02	3025	E1M10000286C03	4267	S1M10000011G04	5509	S1M10000036D02
542	E3M10000033E09	1784	E1M10000209D05	3026	E1M10000286C04	4268	S1M10000011H04	5510	S1M10000036H02
543	E3M10000033G09	1785	E1M10000209E05	3027	E1M10000286E04	4269	S1M10000011B05	5511	S1M10000036A03
544	E3M10000033H09	1786	E1M10000209A06	3028	E1M10000286C05	4270	S1M10000011C05	5512	S1M10000036C03
545	E3M10000033C10	1787	E1M10000209H08	3029	E1M10000286D05	4271	S1M10000011G05	5513	S1M10000036G03
546	E3M10000033D10	1788	E1M10000209C10	3030	E1M10000286E05	4272	S1M10000011A06	5514	S1M10000036H03
547	E3M10000033F10	1789	E1M10000209G10	3031	E1M10000286F05	4273	S1M10000011C06	5515	S1M10000036A04
548	E3M10000033H10	1790	E1M10000209E11	3032	E1M10000286H05	4274	S1M10000011D06	5516	S1M10000036B04
549	E3M10000033A11	1791	E1M10000209D12	3033	E1M10000286A06	4275	S1M10000011F06	5517	S1M10000036C04
550	E3M10000033C11	1792	E1M10000210G02	3034	E1M10000286G06	4276	S1M10000011G06	5518	S1M10000036H04
551	E3M10000033D11	1793	E1M10000210F03	3035	E1M10000286F07	4277	S1M10000012B01	5519	S1M10000036A05
552	E3M10000033E11	1794	E1M10000210B05	3036	E1M10000286B08	4278	S1M10000012C01	5520	S1M10000036C05
553	E3M10000033H11	1795	E1M10000210C05	3037	E1M10000286F08	4279	S1M10000012E01	5521	S1M10000036H05
554	E3M10000033C12	1796	E1M10000210G05	3038	E1M10000286H08	4280	S1M10000012G01	5522	S1M10000036B06
555	E3M10000033F12	1797	E1M10000210E07	3039	E1M10000286D09	4281	S1M10000012A02	5523	S1M10000036C06
556	E3M10000033G12	1798	E1M10000210B10	3040	E1M10000286F09	4282	S1M10000012E02	5524	S1M10000036D06
557	E3M10000034D01	1799	E1M10000210B11	3041	E1M10000286A10	4283	S1M10000012G02	5525	S1M10000036E06
558	E3M10000034E01	1800	E1M10000211C02	3042	E1M10000286F10	4284	S1M10000012C03	5526	S1M10000036F06
559	E3M10000034A02	1801	E1M10000211E04	3043	E1M10000286A11	4285	S1M10000012F03	5527	S1M10000036H06
560	E3M10000034B02	1802	E1M10000211F04	3044	E1M10000286C11	4286	S1M10000012G03	5528	S1M10000036A07
561	E3M10000034C02	1803	E1M10000211A05	3045	E1M10000286E12	4287	S1M10000012C04	5529	S1M10000036B07
562	E3M10000034D02	1804	E1M10000211F05	3046	E1M10000287B02	4288	S1M10000012D04	5530	S1M10000036C07
563	E3M10000034F02	1805	E1M10000211C06	3047	E1M10000287D02	4289	S1M10000012E04	5531	S1M10000036F07
564	E3M10000034G02	1806	E1M10000211C08	3048	E1M10000287F02	4290	S1M10000012F04	5532	S1M10000036G07
565	E3M10000034H02	1807	E1M10000211D11	3049	E1M10000287E03	4291	S1M10000012B05	5533	S1M10000036A08
566	E3M10000034A03	1808	E1M10000212B03	3050	E1M10000287A04	4292	S1M10000012C05	5534	S1M10000036B08
567	E3M10000034F03	1809	E1M10000212D05	3051	E1M10000287B05	4293	S1M10000012D05	5535	S1M10000036D08
568	E3M10000034G03	1810	E1M10000212H05	3052	E1M10000287C05	4294	S1M10000012H05	5536	S1M10000036E08
569	E3M10000034H03	1811	E1M10000212A08	3053	E1M10000287E05	4295	S1M10000012A06	5537	S1M10000036F08
570	E3M10000034A04	1812	E1M10000212G12	3054	E1M10000287G05	4296	S1M10000012B06	5538	S1M10000036G08
571	E3M10000034B04	1813	E1M10000213D01	3055	E1M10000287H05	4297	S1M10000012C06	5539	S1M10000036H08
572	E3M10000034C04	1814	E1M10000213B02	3056	E1M10000287A06	4298	S1M10000012D06	5540	S1M10000036B09
573	E3M10000034D04	1815	E1M10000213C04	3057	E1M10000287C06	4299	S1M10000012G06	5541	S1M10000036C09

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
574	E3M10000034E04	1816	E1M10000213A05	3058	E1M10000287A07	4300	S1M10000012B07	5542	S1M10000036F09
575	E3M10000034F04	1817	E1M10000213F07	3059	E1M10000287A09	4301	S1M10000012D07	5543	S1M10000036A10
576	E3M10000035B01	1818	E1M10000213G07	3060	E1M10000287A10	4302	S1M10000012E07	5544	S1M10000036C10
577	E3M10000035C01	1819	E1M10000213A08	3061	E1M10000287C10	4303	S1M10000012F07	5545	S1M10000036D10
578	E3M10000035F01	1820	E1M10000213C08	3062	E1M10000287B11	4304	S1M10000012G07	5546	S1M10000036F10
579	E3M10000035A02	1821	E1M10000213F08	3063	E1M10000287F11	4305	S1M10000012A08	5547	S1M10000036A11
580	E3M10000035D02	1822	E1M10000213E09	3064	E1M10000287G12	4306	S1M10000012B08	5548	S1M10000036B11
581	E3M10000035F02	1823	E1M10000213F09	3065	E1M10000288B02	4307	S1M10000012D08	5549	S1M10000036D11
582	E3M10000035G02	1824	E1M10000213G09	3066	E1M10000288D02	4308	S1M10000012E08	5550	S1M10000036E11
583	E3M10000035B03	1825	E1M10000213H09	3067	E1M10000288H02	4309	S1M10000012F08	5551	S1M10000036F11
584	E3M10000035C03	1826	E1M10000229B01	3068	E1M10000288A03	4310	S1M10000012G08	5552	S1M10000036G11
585	E3M10000035D03	1827	E1M10000229D01	3069	E1M10000288B03	4311	S1M10000012H08	5553	S1M10000036H11
586	E3M10000035E03	1828	E1M10000229C02	3070	E1M10000288F03	4312	S1M10000012A09	5554	S1M10000036A12
587	E3M10000035F03	1829	E1M10000229B03	3071	E1M10000288C04	4313	S1M10000012D09	5555	S1M10000036B12
588	E3M10000035H03	1830	E1M10000229E03	3072	E1M10000288D04	4314	S1M10000012F09	5556	S1M10000036D12
589	E3M10000035A04	1831	E1M10000229G05	3073	E1M10000288A05	4315	S1M10000012H09	5557	S1M10000036E12
590	E3M10000035C04	1832	E1M10000229H06	3074	E1M10000288H05	4316	S1M10000012A10	5558	S1M10000037G01
591	E3M10000035D04	1833	E1M10000229E08	3075	E1M10000288A06	4317	S1M10000012F10	5559	S1M10000037A02
592	E3M10000035E04	1834	E1M10000229E10	3076	E1M10000288G06	4318	S1M10000012G10	5560	S1M10000037E02
593	E3M10000035G04	1835	E1M10000229F10	3077	E1M10000288C07	4319	S1M10000012H10	5561	S1M10000037F02
594	E3M10000035A05	1836	E1M10000229C12	3078	E1M10000288G07	4320	S1M10000012A11	5562	S1M10000037G02
595	E3M10000035C05	1837	E1M10000229D12	3079	E1M10000288E08	4321	S1M10000012B11	5563	S1M10000037H02
596	E3M10000035D05	1838	E1M10000230C02	3080	E1M10000288D09	4322	S1M10000012C11	5564	S1M10000037A03
597	E3M10000035E05	1839	E1M10000230A03	3081	E1M10000288E09	4323	S1M10000012F11	5565	S1M10000037B03
598	E3M10000035G05	1840	E1M10000230F03	3082	E1M10000288E10	4324	S1M10000012H11	5566	S1M10000037E03
599	E3M10000035A06	1841	E1M10000230B04	3083	E1M10000288F11	4325	S1M10000012C12	5567	S1M10000037F03
600	E3M10000035C06	1842	E1M10000230C04	3084	E1M10000288H11	4326	S1M10000012D12	5568	S1M10000037G03
601	E3M10000035F06	1843	E1M10000230E04	3085	E1M10000288D12	4327	S1M10000012E12	5569	S1M10000037H03
602	E3M10000035H06	1844	E1M10000230F04	3086	E1M10000289D01	4328	S1M10000012F12	5570	S1M10000037B04
603	E3M10000035B07	1845	E1M10000230B05	3087	E1M10000289F01	4329	S1M10000013E01	5571	S1M10000037D04
604	E3M10000035C07	1846	E1M10000230D05	3088	E1M10000289G01	4330	S1M10000013G01	5572	S1M10000037F04
605	E3M10000035E07	1847	E1M10000230H05	3089	E1M10000289G05	4331	S1M10000013A02	5573	S1M10000037B05
606	E3M10000035F07	1848	E1M10000230A06	3090	E1M10000289B06	4332	S1M10000013B02	5574	S1M10000037C05
607	E3M10000035A08	1849	E1M10000230H07	3091	E1M10000289D06	4333	S1M10000013E02	5575	S1M10000037D05
608	E3M10000035B08	1850	E1M10000230A08	3092	E1M10000289G06	4334	S1M10000013F02	5576	S1M10000037F05
609	E3M10000035C08	1851	E1M10000230A10	3093	E1M10000289E07	4335	S1M10000013A03	5577	S1M10000037H05

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
610	E3M10000035E08	1852	E1M10000230F10	3094	E1M10000289G07	4336	S1M10000013B03	5578	S1M10000037A06
611	E3M10000035F08	1853	E1M10000230H10	3095	E1M10000289A08	4337	S1M10000013C03	5579	S1M10000037B06
612	E3M10000035G08	1854	E1M10000230B11	3096	E1M10000289H08	4338	S1M10000013F03	5580	S1M10000037C06
613	E3M10000035A09	1855	E1M10000230G11	3097	E1M10000289D09	4339	S1M10000013H03	5581	S1M10000037D06
614	E3M10000035C09	1856	E1M10000230C12	3098	E1M10000289C10	4340	S1M10000013B04	5582	S1M10000037E06
615	E3M10000035E09	1857	E1M10000231A02	3099	E1M10000289G10	4341	S1M10000013E04	5583	S1M10000037F06
616	E3M10000035F09	1858	E1M10000231C02	3100	E1M10000289B11	4342	S1M10000013G04	5584	S1M10000037G06
617	E3M10000035G09	1859	E1M10000231D02	3101	E1M10000289G11	4343	S1M10000013H04	5585	S1M10000037B07
618	E3M10000035H09	1860	E1M10000231A03	3102	E1M10000289E12	4344	S1M10000013A05	5586	S1M10000037C07
619	E3M10000035B10	1861	E1M10000231E03	3103	E1M10000290B01	4345	S1M10000013B05	5587	S1M10000037F07
620	E3M10000035D10	1862	E1M10000231H04	3104	E1M10000290G01	4346	S1M10000013C05	5588	S1M10000037H07
621	E3M10000035E10	1863	E1M10000231B05	3105	E1M10000290A02	4347	S1M10000013G05	5589	S1M10000037A08
622	E3M10000035F10	1864	E1M10000231F05	3106	E1M10000290B02	4348	S1M10000013H05	5590	S1M10000037B08
623	E3M10000035G10	1865	E1M10000231C06	3107	E1M10000290E02	4349	S1M10000013B06	5591	S1M10000037C08
624	E3M10000035A11	1866	E1M10000231A08	3108	E1M10000290F04	4350	S1M10000013E06	5592	S1M10000037E08
625	E3M10000035B11	1867	E1M10000231G09	3109	E1M10000290F05	4351	S1M10000013G06	5593	S1M10000037F08
626	E3M10000035C11	1868	E1M10000231G09	3110	E1M10000290D06	4352	S1M10000013A07	5594	S1M10000037G08
627	E3M10000035D11	1869	E1M10000231C10	3111	E1M10000290D08	4353	S1M10000013B07	5595	S1M10000037H08
628	E3M10000035E11	1870	E1M10000231E10	3112	E1M10000290E08	4354	S1M10000013C07	5596	S1M10000037A09
629	E3M10000035F11	1871	E1M10000231D11	3113	E1M10000290F08	4355	S1M10000013F07	5597	S1M10000037C09
630	E3M10000035G11	1872	E1M10000231E11	3114	E1M10000290B09	4356	S1M10000013G07	5598	S1M10000037D09
631	E3M10000035H11	1873	E1M10000231G11	3115	E1M10000290D10	4357	S1M10000013H07	5599	S1M10000037E09
632	E3M10000035B12	1874	E1M10000231C12	3116	E1M10000290E11	4358	S1M10000013A08	5600	S1M10000037F09
633	E3M10000035C12	1875	E1M10000231E12	3117	E1M10000291E01	4359	S1M10000013C08	5601	S1M10000037H09
634	E3M10000035E12	1876	E1M10000231G12	3118	E1M10000291B02	4360	S1M10000013D08	5602	S1M10000037B10
635	E3M10000035F12	1877	E1M10000214E01	3119	E1M10000291F02	4361	S1M10000013E08	5603	S1M10000037C10
636	E3M10000036B01	1878	E1M10000214F01	3120	E1M10000291A03	4362	S1M10000013F08	5604	S1M10000037E10
637	E3M10000036C01	1879	E1M10000214B02	3121	E1M10000291B04	4363	S1M10000013G08	5605	S1M10000037F10
638	E3M10000036E01	1880	E1M10000214E02	3122	E1M10000291E04	4364	S1M10000013A09	5606	S1M10000037G10
639	E3M10000036G01	1881	E1M10000214H02	3123	E1M10000291E05	4365	S1M10000013B09	5607	S1M10000037A11
640	E3M10000036G02	1882	E1M10000214E03	3124	E1M10000291G05	4366	S1M10000013C09	5608	S1M10000037B11
641	E3M10000036H02	1883	E1M10000214C04	3125	E1M10000291A06	4367	S1M10000013D09	5609	S1M10000037E11
642	E3M10000036A03	1884	E1M10000214G06	3126	E1M10000291B06	4368	S1M10000013E09	5610	S1M10000037H11
643	E3M10000036B03	1885	E1M10000214A07	3127	E1M10000291C06	4369	S1M10000013F09	5611	S1M10000037A12
644	E3M10000036C03	1886	E1M10000214D08	3128	E1M10000291D06	4370	S1M10000013H09	5612	S1M10000037B12
645	E3M10000036D03	1887	E1M10000214H11	3129	E1M10000291E07	4371	S1M10000013A10	5613	S1M10000037D12

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
646	E3M10000036F03	1888	E1M10000214F12	3130	E1M10000291A08	4372	S1M10000013C10	5614	S1M10000037E12
647	E3M10000036G03	1889	E1M10000215B01	3131	E1M10000291B08	4373	S1M10000013E10	5615	S1M10000038B01
648	E3M10000036H03	1890	E1M10000215F01	3132	E1M10000291F08	4374	S1M10000013F10	5616	S1M10000038C01
649	E3M10000036A04	1891	E1M10000215B03	3133	E1M10000291B10	4375	S1M10000013G10	5617	S1M10000038E01
650	E3M10000036D04	1892	E1M10000215F03	3134	E1M10000291E10	4376	S1M10000013H10	5618	S1M10000038G01
651	E3M10000036E04	1893	E1M10000215H03	3135	E1M10000291D11	4377	S1M10000013A11	5619	S1M10000038C02
652	E3M10000036F04	1894	E1M10000215B04	3136	E1M10000291F11	4378	S1M10000013B11	5620	S1M10000038D02
653	E3M10000036G04	1895	E1M10000215C05	3137	E1M10000291G11	4379	S1M10000013C11	5621	S1M10000038E02
654	E3M10000036H04	1896	E1M10000215D05	3138	E1M10000291H11	4380	S1M10000013D11	5622	S1M10000038B03
655	E3M10000036A05	1897	E1M10000215F06	3139	E1M10000291B12	4381	S1M10000013G11	5623	S1M10000038D03
656	E3M10000036E05	1898	E1M10000215A07	3140	E1M10000291F12	4382	S1M10000013H11	5624	S1M10000038E03
657	E3M10000036F05	1899	E1M10000215B07	3141	E1M10000293B01	4383	S1M10000013A12	5625	S1M10000038F03
658	E3M10000036H05	1900	E1M10000215C07	3142	E1M10000293B02	4384	S1M10000013F12	5626	S1M10000038G03
659	E3M10000036A06	1901	E1M10000215H07	3143	E1M10000293G02	4385	S1M10000013G12	5627	S1M10000038H03
660	E3M10000036B06	1902	E1M10000215F08	3144	E1M10000293A04	4386	S1M10000014B01	5628	S1M10000038A04
661	E3M10000036C06	1903	E1M10000215A09	3145	E1M10000293B04	4387	S1M10000014E01	5629	S1M10000038D04
662	E3M10000036D06	1904	E1M10000215G09	3146	E1M10000293A05	4388	S1M10000014A02	5630	S1M10000038E04
663	E3M10000036G06	1905	E1M10000215C10	3147	E1M10000293E05	4389	S1M10000014B02	5631	S1M10000038F04
664	E3M10000036H06	1906	E1M10000215D10	3148	E1M10000293G05	4390	S1M10000014F02	5632	S1M10000038G04
665	E3M10000036A07	1907	E1M10000215B12	3149	E1M10000293A06	4391	S1M10000014G02	5633	S1M10000038D05
666	E3M10000036B07	1908	E1M10000215F12	3150	E1M10000293H06	4392	S1M10000014H02	5634	S1M10000038E05
667	E3M10000036C07	1909	E1M10000216E01	3151	E1M10000293F07	4393	S1M10000014A03	5635	S1M10000038B06
668	E3M10000036E07	1910	E1M10000216B02	3152	E1M10000293C08	4394	S1M10000014B03	5636	S1M10000038C06
669	E3M10000036H07	1911	E1M10000216C02	3153	E1M10000293E08	4395	S1M10000014D03	5637	S1M10000038E06
670	E3M10000036A08	1912	E1M10000216G02	3154	E1M10000293G08	4396	S1M10000014F03	5638	S1M10000038F06
671	E3M10000036B08	1913	E1M10000216H02	3155	E1M10000293B09	4397	S1M10000014H03	5639	S1M10000038G06
672	E3M10000036C08	1914	E1M10000216B03	3156	E1M10000293G09	4398	S1M10000014B04	5640	S1M10000038A07
673	E3M10000036E08	1915	E1M10000216D03	3157	E1M10000293H09	4399	S1M10000014E04	5641	S1M10000038B07
674	E3M10000036F08	1916	E1M10000216C04	3158	E1M10000293A11	4400	S1M10000014F04	5642	S1M10000038D07
675	E3M10000036H08	1917	E1M10000216E04	3159	E1M10000293E11	4401	S1M10000014G04	5643	S1M10000038E07
676	E3M10000036A09	1918	E1M10000216E05	3160	E1M10000293F11	4402	S1M10000014H04	5644	S1M10000038H07
677	E3M10000036B09	1919	E1M10000216H05	3161	E1M10000293C12	4403	S1M10000014A05	5645	S1M10000038A08
678	E3M10000036C09	1920	E1M10000216E07	3162	E1M10000293D12	4404	S1M10000014B05	5646	S1M10000038B08
679	E3M10000036D09	1921	E1M10000216A09	3163	E1M10000295D01	4405	S1M10000014C05	5647	S1M10000038C08
680	E3M10000036F09	1922	E1M10000216B10	3164	E1M10000295G01	4406	S1M10000014E05	5648	S1M10000038D08
681	E3M10000036H09	1923	E1M10000216C11	3165	E1M10000295B02	4407	S1M10000014F05	5649	S1M10000038F08

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
682	E3M10000036A10	1924	E1M10000216E11	3166	E1M10000295E02	4408	S1M10000014H05	5650	S1M10000038G08
683	E3M10000036C10	1925	E1M10000216H11	3167	E1M10000295F02	4409	S1M10000014B06	5651	S1M10000038A09
684	E3M10000036D10	1926	E1M10000216D12	3168	E1M10000295H04	4410	S1M10000014C06	5652	S1M10000038B09
685	E3M10000036F10	1927	E1M10000217D02	3169	E1M10000295A07	4411	S1M10000014D06	5653	S1M10000038D09
686	E3M10000036G10	1928	E1M10000217E02	3170	E1M10000295B07	4412	S1M10000014G06	5654	S1M10000038F09
687	E3M10000036H10	1929	E1M10000217H02	3171	E1M10000295C07	4413	S1M10000014H06	5655	S1M10000038H09
688	E3M10000036B11	1930	E1M10000217C04	3172	E1M10000295D08	4414	S1M10000014A07	5656	S1M10000038C10
689	E3M10000036C11	1931	E1M10000217D06	3173	E1M10000295F08	4415	S1M10000014B07	5657	S1M10000038D10
690	E3M10000036D11	1932	E1M10000217B07	3174	E1M10000295G08	4416	S1M10000014C07	5658	S1M10000038E10
691	E3M10000036B12	1933	E1M10000217B08	3175	E1M10000295B09	4417	S1M10000014E07	5659	S1M10000038F10
692	E3M10000036D12	1934	E1M10000217G10	3176	E1M10000295F09	4418	S1M10000014G07	5660	S1M10000038G10
693	E3M10000037C01	1935	E1M10000217B11	3177	E1M10000295G09	4419	S1M10000014B08	5661	S1M10000038A11
694	E3M10000037E01	1936	E1M10000217C11	3178	E1M10000295D10	4420	S1M10000014D08	5662	S1M10000038C11
695	E3M10000037F01	1937	E1M10000217E11	3179	E1M10000295H10	4421	S1M10000014E08	5663	S1M10000038D11
696	E3M10000037G01	1938	E1M10000217G11	3180	E1M10000295B11	4422	S1M10000014F08	5664	S1M10000038F11
697	E3M10000037B02	1939	E1M10000218D01	3181	E1M10000295F11	4423	S1M10000014G08	5665	S1M10000038G11
698	E3M10000037C02	1940	E1M10000218F01	3182	E1M10000295G12	4424	S1M10000014H08	5666	S1M10000038H11
699	E3M10000037D02	1941	E1M10000218A02	3183	E1M10000312D11	4425	S1M10000014C09	5667	S1M10000038A12
700	E3M10000037E02	1942	E1M10000218D02	3184	E1M10000296B01	4426	S1M10000014D09	5668	S1M10000038B12
701	E3M10000037F02	1943	E1M10000218G03	3185	E1M10000296C02	4427	S1M10000014E09	5669	S1M10000038C12
702	E3M10000037G02	1944	E1M10000218E07	3186	E1M10000296D02	4428	S1M10000014F09	5670	S1M10000038D12
703	E3M10000037A03	1945	E1M10000218B08	3187	E1M10000296H02	4429	S1M10000014B10	5671	S1M10000038E12
704	E3M10000037B03	1946	E1M10000218H08	3188	E1M10000296C03	4430	S1M10000014C10	5672	S1M10000038F12
705	E3M10000037D03	1947	E1M10000218B09	3189	E1M10000296E03	4431	S1M10000014D10	5673	S1M10000038G12
706	E3M10000037E03	1948	E1M10000218C10	3190	E1M10000296H03	4432	S1M10000014E10	5674	S1M10000039B01
707	E3M10000037G03	1949	E1M10000218A11	3191	E1M10000296D04	4433	S1M10000014F10	5675	S1M10000039E01
708	E3M10000037C04	1950	E1M10000218B11	3192	E1M10000296G04	4434	S1M10000014A11	5676	S1M10000039A02
709	E3M10000037D04	1951	E1M10000218E11	3193	E1M10000296F05	4435	S1M10000014B11	5677	S1M10000039B02
710	E3M10000037C05	1952	E1M10000218B12	3194	E1M10000296G05	4436	S1M10000014C11	5678	S1M10000039D02
711	E3M10000037D05	1953	E1M10000218C12	3195	E1M10000296H05	4437	S1M10000014D11	5679	S1M10000039F02
712	E3M10000037E05	1954	E1M10000218E12	3196	E1M10000296A06	4438	S1M10000014H11	5680	S1M10000039H02
713	E3M10000037G05	1955	E1M10000218G12	3197	E1M10000296G07	4439	S1M10000014A12	5681	S1M10000039F03
714	E3M10000037H05	1956	E1M10000219C01	3198	E1M10000296H07	4440	S1M10000014B12	5682	S1M10000039G03
715	E3M10000037A06	1957	E1M10000219B04	3199	E1M10000296E08	4441	S1M10000014C12	5683	S1M10000039H03
716	E3M10000037C06	1958	E1M10000219E05	3200	E1M10000296F08	4442	S1M10000014E12	5684	S1M10000039C04
717	E3M10000037D06	1959	E1M10000219F05	3201	E1M10000296G08	4443	S1M10000014G12	5685	S1M10000039G04

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
718	E3M10000037F06	1960	E1M10000219H05	3202	E1M10000296H08	4444	S1M10000015C01	5686	S1M10000039H04
719	E3M10000037G06	1961	E1M10000219B06	3203	E1M10000296A09	4445	S1M10000015F01	5687	S1M10000039A05
720	E3M10000037B07	1962	E1M10000219C06	3204	E1M10000296B11	4446	S1M10000015G01	5688	S1M10000039F05
721	E3M10000037C07	1963	E1M10000219G07	3205	E1M10000296E11	4447	S1M10000015A02	5689	S1M10000039H05
722	E3M10000037E07	1964	E1M10000219H07	3206	E1M10000296F12	4448	S1M10000015B02	5690	S1M10000039B06
723	E3M10000037F07	1965	E1M10000219A08	3207	E1M10000296G12	4449	S1M10000015C02	5691	S1M10000039C06
724	E3M10000037G07	1966	E1M10000219A09	3208	E1M10000298C01	4450	S1M10000015D02	5692	S1M10000039H06
725	E3M10000037H07	1967	E1M10000219E09	3209	E1M10000298G01	4451	S1M10000015E02	5693	S1M10000039A07
726	E3M10000037A08	1968	E1M10000219A10	3210	E1M10000298G02	4452	S1M10000015F02	5694	S1M10000039B07
727	E3M10000037B08	1969	E1M10000219E10	3211	E1M10000298C03	4453	S1M10000015G02	5695	S1M10000039C07
728	E3M10000037E08	1970	E1M10000219D11	3212	E1M10000298D03	4454	S1M10000015A03	5696	S1M10000039F07
729	E3M10000037G08	1971	E1M10000220B01	3213	E1M10000298H03	4455	S1M10000015C03	5697	S1M10000039G07
730	E3M10000037A09	1972	E1M10000220C01	3214	E1M10000298E04	4456	S1M10000015D03	5698	S1M10000039H07
731	E3M10000037D09	1973	E1M10000220D01	3215	E1M10000298H04	4457	S1M10000015E03	5699	S1M10000039A08
732	E3M10000037A10	1974	E1M10000220F01	3216	E1M10000298C05	4458	S1M10000015F03	5700	S1M10000039C08
733	E3M10000037E10	1975	E1M10000220F02	3217	E1M10000298D05	4459	S1M10000015G03	5701	S1M10000039E08
734	E3M10000037G10	1976	E1M10000220A03	3218	E1M10000298C06	4460	S1M10000015A04	5702	S1M10000039F08
735	E3M10000037H10	1977	E1M10000220B03	3219	E1M10000298D06	4461	S1M10000015D04	5703	S1M10000039H08
736	E3M10000037B11	1978	E1M10000220F04	3220	E1M10000298G06	4462	S1M10000015F04	5704	S1M10000039C09
737	E3M10000037C11	1979	E1M10000220G04	3221	E1M10000298B07	4463	S1M10000015G04	5705	S1M10000039D09
738	E3M10000037D11	1980	E1M10000220B05	3222	E1M10000298C07	4464	S1M10000015H04	5706	S1M10000039E09
739	E3M10000037G11	1981	E1M10000220E05	3223	E1M10000298G07	4465	S1M10000015A05	5707	S1M10000039F09
740	E3M10000037C12	1982	E1M10000220H05	3224	E1M10000298B09	4466	S1M10000015C05	5708	S1M10000039B10
741	E3M10000037E12	1983	E1M10000220B06	3225	E1M10000298D09	4467	S1M10000015D05	5709	S1M10000039C10
742	E3M10000037F12	1984	E1M10000220D06	3226	E1M10000298D11	4468	S1M10000015G05	5710	S1M10000039D10
743	E3M10000038D01	1985	E1M10000220F06	3227	E1M10000298F11	4469	S1M10000015A06	5711	S1M10000039E10
744	E3M10000038B02	1986	E1M10000220A08	3228	E1M10000311F01	4470	S1M10000015C06	5712	S1M10000039F10
745	E3M10000038C02	1987	E1M10000220C08	3229	E1M10000311C02	4471	S1M10000015D06	5713	S1M10000039G10
746	E3M10000038D02	1988	E1M10000220A09	3230	E1M10000311E02	4472	S1M10000015E06	5714	S1M10000039A11
747	E3M10000038E02	1989	E1M10000220D09	3231	E1M10000311A03	4473	S1M10000015F06	5715	S1M10000039C11
748	E3M10000038G02	1990	E1M10000220G09	3232	E1M10000311C03	4474	S1M10000015G06	5716	S1M10000039E11
749	E3M10000038H02	1991	E1M10000220A11	3233	E1M10000311D03	4475	S1M10000015H06	5717	S1M10000039A12
750	E3M10000038A03	1992	E1M10000220H11	3234	E1M10000311H03	4476	S1M10000015E07	5718	S1M10000039B12
751	E3M10000038B03	1993	E1M10000221B01	3235	E1M10000311D04	4477	S1M10000015F07	5719	S1M10000039F12
752	E3M10000038C03	1994	E1M10000221E01	3236	E1M10000311E05	4478	S1M10000015G07	5720	S1M10000040B01
753	E3M10000038E03	1995	E1M10000221B02	3237	E1M10000311F05	4479	S1M10000015B08	5721	S1M10000040D01

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
754	E3M10000038G03	1996	E1M10000221F02	3238	E1M10000311D06	4480	S1M10000015C08	5722	S1M10000040E01
755	E3M10000038B04	1997	E1M10000222B02	3239	E1M10000311C07	4481	S1M10000015F08	5723	S1M10000040F01
756	E3M10000038D04	1998	E1M10000222D02	3240	E1M10000311E07	4482	S1M10000015G08	5724	S1M10000040G01
757	E3M10000038E04	1999	E1M10000222E05	3241	E1M10000311F07	4483	S1M10000015A09	5725	S1M10000040H01
758	E3M10000038F04	2000	E1M10000222F05	3242	E1M10000311D08	4484	S1M10000015B09	5726	S1M10000040E02
759	E3M10000038A05	2001	E1M10000222B09	3243	E1M10000311C09	4485	S1M10000015E09	5727	S1M10000040F02
760	E3M10000038B05	2002	E1M10000222B10	3244	E1M10000311F09	4486	S1M10000015F09	5728	S1M10000040G02
761	E3M10000038C05	2003	E1M10000222C12	3245	E1M10000311C10	4487	S1M10000015G09	5729	S1M10000040H02
762	E3M10000038E05	2004	E1M10000222E12	3246	E1M10000311E11	4488	S1M10000015B10	5730	S1M10000040B03
763	E3M10000038F05	2005	E1M10000223C04	3247	E1M10000311B12	4489	S1M10000015C10	5731	S1M10000040C03
764	E3M10000038H05	2006	E1M10000223F04	3248	E1M10000311F12	4490	S1M10000015E10	5732	S1M10000040D03
765	E3M10000038B06	2007	E1M10000223H05	3249	E1M10000292C05	4491	S1M10000015F10	5733	S1M10000040F03
766	E3M10000038F06	2008	E1M10000223H11	3250	E1M10000292D08	4492	S1M10000015G10	5734	S1M10000040G03
767	E3M10000038G06	2009	E1M10000224E05	3251	E1M10000292A09	4493	S1M10000015A11	5735	S1M10000040H03
768	E3M10000038H06	2010	E1M10000225G01	3252	E1M10000292C12	4494	S1M10000015C11	5736	S1M10000040A04
769	E3M10000038A07	2011	E1M10000225A02	3253	E1M10000294F01	4495	S1M10000015E11	5737	S1M10000040C04
770	E3M10000038B07	2012	E1M10000225C02	3254	E1M10000294C02	4496	S1M10000015G11	5738	S1M10000040E04
771	E3M10000038C07	2013	E1M10000225E02	3255	E1M10000294E02	4497	S1M10000015A12	5739	S1M10000040F04
772	E3M10000038E07	2014	E1M10000225F03	3256	E1M10000294G02	4498	S1M10000015C12	5740	S1M10000040G04
773	E3M10000038F07	2015	E1M10000225H03	3257	E1M10000294A04	4499	S1M10000015D12	5741	S1M10000040H04
774	E3M10000038G07	2016	E1M10000225F04	3258	E1M10000294C04	4500	S1M10000015E12	5742	S1M10000040A05
775	E3M10000038H07	2017	E1M10000225A06	3259	E1M10000294F04	4501	S1M10000016C01	5743	S1M10000040C05
776	E3M10000038A08	2018	E1M10000225B06	3260	E1M10000294H04	4502	S1M10000016D01	5744	S1M10000040D05
777	E3M10000038B08	2019	E1M10000225B07	3261	E1M10000294D05	4503	S1M10000016G01	5745	S1M10000040E05
778	E3M10000038D08	2020	E1M10000225E08	3262	E1M10000294F05	4504	S1M10000016B02	5746	S1M10000040F05
779	E3M10000038E08	2021	E1M10000225E09	3263	E1M10000294H05	4505	S1M10000016C02	5747	S1M10000040H05
780	E3M10000038H08	2022	E1M10000225H09	3264	E1M10000294C06	4506	S1M10000016D02	5748	S1M10000040C06
781	E3M10000038A09	2023	E1M10000225F10	3265	E1M10000294F06	4507	S1M10000016F02	5749	S1M10000040E06
782	E3M10000038B09	2024	E1M10000225D12	3266	E1M10000294G06	4508	S1M10000016A03	5750	S1M10000040F06
783	E3M10000038F09	2025	E1M10000225G12	3267	E1M10000294A08	4509	S1M10000016F03	5751	S1M10000040A07
784	E3M10000038H09	2026	E1M10000226E01	3268	E1M10000294B09	4510	S1M10000016G03	5752	S1M10000040B07
785	E3M10000038A10	2027	E1M10000226B02	3269	E1M10000294F09	4511	S1M10000016H03	5753	S1M10000040C07
786	E3M10000038C10	2028	E1M10000226C02	3270	E1M10000294E09	4512	S1M10000016A04	5754	S1M10000040E07
787	E3M10000038D10	2029	E1M10000226F02	3271	E1M10000294B10	4513	S1M10000016C04	5755	S1M10000040G07
788	E3M10000038F10	2030	E1M10000226D03	3272	E1M10000294G10	4514	S1M10000016D04	5756	S1M10000040H07
789	E3M10000038H10	2031	E1M10000226G03	3273	E1M10000294F11	4515	S1M10000016E04	5757	S1M10000040A08

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
790	E3M10000038A11	2032	E1M10000226F04	3274	E1M10000294B12	4516	S1M10000016G04	5758	S1M10000040B08
791	E3M10000038B11	2033	E1M10000226H04	3275	E1M10000294C12	4517	S1M10000016H04	5759	S1M10000040C08
792	E3M10000038D11	2034	E1M10000226H06	3276	E1M10000294E12	4518	S1M10000016B05	5760	S1M10000040D08
793	E3M10000038E11	2035	E1M10000226A08	3277	E1M10000300F05	4519	S1M10000016C05	5761	S1M10000040F08
794	E3M10000038F11	2036	E1M10000226D08	3278	E1M10000300E08	4520	S1M10000016D05	5762	S1M10000040G08
795	E3M10000038G11	2037	E1M10000226D09	3279	E1M10000300G09	4521	S1M10000016E05	5763	S1M10000040H08
796	E3M10000038H11	2038	E1M10000226B10	3280	E1M10000301F02	4522	S1M10000016F05	5764	S1M10000040D09
797	E3M10000038C12	2039	E1M10000226D10	3281	E1M10000301F03	4523	S1M10000016G05	5765	S1M10000040E09
798	E3M10000038D12	2040	E1M10000226E10	3282	E1M10000301G05	4524	S1M10000016A06	5766	S1M10000040F09
799	E3M10000039B01	2041	E1M10000226G11	3283	E1M10000301C06	4525	S1M10000016B06	5767	S1M10000040C10
800	E3M10000039E01	2042	E1M10000226B12	3284	E1M10000301F06	4526	S1M10000016C06	5768	S1M10000040D10
801	E3M10000039F01	2043	E1M10000226F12	3285	E1M10000301G08	4527	S1M10000016D06	5769	S1M10000040E10
802	E3M10000039G01	2044	E1M10000227E03	3286	E1M10000301C09	4528	S1M10000016E06	5770	S1M10000040G10
803	E3M10000039A02	2045	E1M10000227G03	3287	E1M10000301F09	4529	S1M10000016F06	5771	S1M10000040H10
804	E3M10000039C02	2046	E1M10000227E04	3288	E1M10000301D10	4530	S1M10000016A07	5772	S1M10000040A11
805	E3M10000039D02	2047	E1M10000227H04	3289	E1M10000301F10	4531	S1M10000016B07	5773	S1M10000040B11
806	E3M10000039E02	2048	E1M10000227C05	3290	E1M10000301G12	4532	S1M10000016E07	5774	S1M10000040C11
807	E3M10000039F02	2049	E1M10000227C07	3291	E1M10000309G01	4533	S1M10000016B08	5775	S1M10000040D11
808	E3M10000039G02	2050	E1M10000227G07	3292	E1M10000309A02	4534	S1M10000016C08	5776	S1M10000040E11
809	E3M10000039H02	2051	E1M10000227B08	3293	E1M10000309G02	4535	S1M10000016D08	5777	S1M10000040E12
810	E3M10000039B03	2052	E1M10000227D08	3294	E1M10000309A03	4536	S1M10000016E08	5778	S1M10000040F12
811	E3M10000039D03	2053	E1M10000227B09	3295	E1M10000309E03	4537	S1M10000016F08	5779	S1M10000040G12
812	E3M10000039E03	2054	E1M10000227D09	3296	E1M10000309G03	4538	S1M10000016H08	5780	S1M10000041G01
813	E3M10000039F03	2055	E1M10000227E11	3297	E1M10000309H04	4539	S1M10000016A09	5781	S1M10000041H01
814	E3M10000039B04	2056	E1M10000227C12	3298	E1M10000309H05	4540	S1M10000016B09	5782	S1M10000041B02
815	E3M10000039C04	2057	E1M10000227D12	3299	E1M10000309B06	4541	S1M10000016C09	5783	S1M10000041A03
816	E3M10000039D04	2058	E1M10000232H02	3300	E1M10000309B07	4542	S1M10000016D09	5784	S1M10000041B03
817	E3M10000039C05	2059	E1M10000232A03	3301	E1M10000309E07	4543	S1M10000016E09	5785	S1M10000041D03
818	E3M10000039E05	2060	E1M10000232B03	3302	E1M10000309B08	4544	S1M10000016F09	5786	S1M10000041E03
819	E3M10000039G05	2061	E1M10000232H03	3303	E1M10000309E08	4545	S1M10000016A10	5787	S1M10000041F03
820	E3M10000039A06	2062	E1M10000232C07	3304	E1M10000309G09	4546	S1M10000016B10	5788	S1M10000041H04
821	E3M10000039B06	2063	E1M10000232F07	3305	E1M10000309A10	4547	S1M10000016C10	5789	S1M10000041B05
822	E3M10000039C06	2064	E1M10000232G07	3306	E1M10000309G11	4548	S1M10000016D10	5790	S1M10000041G05
823	E3M10000039D06	2065	E1M10000232A08	3307	E1M10000309H11	4549	S1M10000016E10	5791	S1M10000041H05
824	E3M10000039F06	2066	E1M10000232G08	3308	E1M10000309F12	4550	S1M10000016H10	5792	S1M10000041B06
825	E3M10000039A07	2067	E1M10000232G12	3309	E1M10000310G01	4551	S1M10000016B11	5793	S1M10000041D06

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
826	E3M10000039B07	2068	E1M10000233C01	3310	E1M10000310C02	4552	S1M10000016C11	5794	S1M10000041E06
827	E3M10000039C07	2069	E1M10000233A03	3311	E1M10000310G02	4553	S1M10000016D11	5795	S1M10000041G06
828	E3M10000039E07	2070	E1M10000233B03	3312	E1M10000310D03	4554	S1M10000016E11	5796	S1M10000041B07
829	E3M10000039F07	2071	E1M10000233D03	3313	E1M10000310H03	4555	S1M10000016F11	5797	S1M10000041D07
830	E3M10000039G07	2072	E1M10000233H03	3314	E1M10000310A04	4556	S1M10000016A12	5798	S1M10000041H07
831	E3M10000039H07	2073	E1M10000233C04	3315	E1M10000310B04	4557	S1M10000016B12	5799	S1M10000041C08
832	E3M10000039A08	2074	E1M10000233G04	3316	E1M10000310C04	4558	S1M10000016C12	5800	S1M10000041D08
833	E3M10000039B08	2075	E1M10000233A05	3317	E1M10000310D04	4559	S1M10000016E12	5801	S1M10000041G08
834	E3M10000039C08	2076	E1M10000233C05	3318	E1M10000310A05	4560	S1M10000017C01	5802	S1M10000041H08
835	E3M10000039E08	2077	E1M10000233H05	3319	E1M10000310C05	4561	S1M10000017F01	5803	S1M10000041E09
836	E3M10000039F08	2078	E1M10000233D08	3320	E1M10000310A06	4562	S1M10000017A02	5804	S1M10000041H09
837	E3M10000039H08	2079	E1M10000233F08	3321	E1M10000310D06	4563	S1M10000017B02	5805	S1M10000041C10
838	E3M10000039B09	2080	E1M10000233A09	3322	E1M10000310F06	4564	S1M10000017G02	5806	S1M10000041D10
839	E3M10000039C09	2081	E1M10000233E09	3323	E1M10000310A07	4565	S1M10000017A03	5807	S1M10000041G10
840	E3M10000039G09	2082	E1M10000233F09	3324	E1M10000310B07	4566	S1M10000017C03	5808	S1M10000041C11
841	E3M10000039A10	2083	E1M10000233D10	3325	E1M10000310E07	4567	S1M10000017D03	5809	S1M10000041F11
842	E3M10000039C10	2084	E1M10000233H10	3326	E1M10000310A08	4568	S1M10000017A04	5810	S1M10000041G11
843	E3M10000039G10	2085	E1M10000234E01	3327	E1M10000310C09	4569	S1M10000017E04	5811	S1M10000041B12
844	E3M10000039A11	2086	E1M10000234B02	3328	E1M10000310H09	4570	S1M10000017F04	5812	S1M10000041D12
845	E3M10000039B11	2087	E1M10000234G02	3329	E1M10000310B11	4571	S1M10000017B05	5813	S1M10000041E12
846	E3M10000039H11	2088	E1M10000234C05	3330	E1M10000310F11	4572	S1M10000017C05	5814	S1M10000041F12
847	E3M10000040B01	2089	E1M10000234C07	3331	E1M10000310D12	4573	S1M10000017E05	5815	S1M10000042E01
848	E3M10000040F01	2090	E1M10000234C08	3332	E1M10000316D03	4574	S1M10000017F05	5816	S1M10000042F01
849	E3M10000040G01	2091	E1M10000234F08	3333	E1M10000316G03	4575	S1M10000017G05	5817	S1M10000042G01
850	E3M10000040B02	2092	E1M10000234H08	3334	E1M10000316C04	4576	S1M10000017F06	5818	S1M10000042B02
851	E3M10000040C02	2093	E1M10000234F09	3335	E1M10000316H05	4577	S1M10000017G06	5819	S1M10000042C02
852	E3M10000040G02	2094	E1M10000234D10	3336	E1M10000316D08	4578	S1M10000017A07	5820	S1M10000042F02
853	E3M10000040H02	2095	E1M10000234G10	3337	E1M10000316A11	4579	S1M10000017B07	5821	S1M10000042B03
854	E3M10000040A03	2096	E1M10000234B12	3338	E1M10000316D11	4580	S1M10000017A08	5822	S1M10000042E03
855	E3M10000040B03	2097	E1M10000235D01	3339	E1M10000280A04	4581	S1M10000017B08	5823	S1M10000042G03
856	E3M10000040D03	2098	E1M10000235A03	3340	E1M10000281E01	4582	S1M10000017C08	5824	S1M10000042A04
857	E3M10000040F03	2099	E1M10000235H03	3341	E1M10000281G01	4583	S1M10000017E08	5825	S1M10000042D04
858	E3M10000040H03	2100	E1M10000235E04	3342	E1M10000281E03	4584	S1M10000017B09	5826	S1M10000042A05
859	E3M10000040D04	2101	E1M10000235B06	3343	E1M10000281H03	4585	S1M10000017C09	5827	S1M10000042C05
860	E3M10000040G04	2102	E1M10000235F06	3344	E1M10000281C08	4586	S1M10000017D09	5828	S1M10000042F05
861	E3M10000040H04	2103	E1M10000235B08	3345	E1M10000281C11	4587	S1M10000017B10	5829	S1M10000042H05

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
862	E3M10000040A05	2104	E1M10000235E08	3346	E1M10000282A02	4588	S1M10000017C10	5830	S1M10000042A06
863	E3M10000040B05	2105	E1M10000235B09	3347	E1M10000284B01	4589	S1M10000017D10	5831	S1M10000042B06
864	E3M10000040C05	2106	E1M10000235H09	3348	E1M10000284A03	4590	S1M10000017A11	5832	S1M10000042C06
865	E3M10000040G05	2107	E1M10000235B10	3349	E1M10000284B03	4591	S1M10000017B11	5833	S1M10000042E06
866	E3M10000040H05	2108	E1M10000235A11	3350	E1M10000284H03	4592	S1M10000017C11	5834	S1M10000042F06
867	E3M10000040B06	2109	E1M10000235F12	3351	E1M10000284C05	4593	S1M10000017E11	5835	S1M10000042A07
868	E3M10000040C06	2110	E1M10000236E01	3352	E1M10000284E05	4594	S1M10000017F11	5836	S1M10000042B07
869	E3M10000040A07	2111	E1M10000236A02	3353	E1M10000284D06	4595	S1M10000017A12	5837	S1M10000042D07
870	E3M10000040C07	2112	E1M10000236E02	3354	E1M10000284H06	4596	S1M10000017B12	5838	S1M10000042H07
871	E3M10000040G07	2113	E1M10000236A03	3355	E1M10000284A08	4597	S1M10000017C12	5839	S1M10000042B08
872	E3M10000040H07	2114	E1M10000236D03	3356	E1M10000284D08	4598	S1M10000018C01	5840	S1M10000042E08
873	E3M10000040B08	2115	E1M10000236G03	3357	E1M10000284G11	4599	S1M10000018D01	5841	S1M10000042F08
874	E3M10000040C08	2116	E1M10000236A04	3358	E1M10000284C12	4600	S1M10000018E01	5842	S1M10000042G08
875	E3M10000040D08	2117	E1M10000236D04	3359	E1M10000284D12	4601	S1M10000018H01	5843	S1M10000042A09
876	E3M10000040F08	2118	E1M10000236G04	3360	E1M10000284G12	4602	S1M10000018B02	5844	S1M10000042B09
877	E3M10000040G08	2119	E1M10000236A05	3361	E1M10000285B03	4603	S1M10000018C02	5845	S1M10000042F09
878	E3M10000040A09	2120	E1M10000236F05	3362	E1M10000285D03	4604	S1M10000018D02	5846	S1M10000042G09
879	E3M10000040B09	2121	E1M10000236H06	3363	E1M10000285H03	4605	S1M10000018E02	5847	S1M10000042B10
880	E3M10000040C09	2122	E1M10000236D08	3364	E1M10000285F04	4606	S1M10000018H02	5848	S1M10000042C10
881	E3M10000040D09	2123	E1M10000236F09	3365	E1M10000285G04	4607	S1M10000018A03	5849	S1M10000042D10
882	E3M10000040F09	2124	E1M10000236C10	3366	E1M10000285D05	4608	S1M10000018B03	5850	S1M10000042F10
883	E3M10000040G09	2125	E1M10000236A11	3367	E1M10000285B07	4609	S1M10000018C03	5851	S1M10000042G10
884	E3M10000040H09	2126	E1M10000236C11	3368	E1M10000285G07	4610	S1M10000018D03	5852	S1M10000042A11
885	E3M10000040A10	2127	E1M10000236F12	3369	E1M10000285B08	4611	S1M10000018E03	5853	S1M10000042B11
886	E3M10000040B10	2128	E1M10000237A02	3370	E1M10000285D08	4612	S1M10000018F03	5854	S1M10000042C11
887	E3M10000040C10	2129	E1M10000237B02	3371	E1M10000285G08	4613	S1M10000018G03	5855	S1M10000042D11
888	E3M10000040E10	2130	E1M10000237E04	3372	E1M10000285D09	4614	S1M10000018A04	5856	S1M10000042F11
889	E3M10000040A11	2131	E1M10000237H04	3373	E1M10000285F09	4615	S1M10000018C04	5857	S1M10000042H11
890	E3M10000040B11	2132	E1M10000237G06	3374	E1M10000285D10	4616	S1M10000018D04	5858	S1M10000042A12
891	E3M10000040C11	2133	E1M10000237C07	3375	E1M10000285F10	4617	S1M10000018E04	5859	S1M10000042B12
892	E3M10000040E11	2134	E1M10000237G07	3376	E1M10000285G10	4618	S1M10000018F04	5860	S1M10000042G12
893	E3M10000040F11	2135	E1M10000237H07	3377	E1M10000285E11	4619	S1M10000018A05	5861	S1M10000043B01
894	E3M10000040G11	2136	E1M10000237A08	3378	E1M10000285F11	4620	S1M10000018B05	5862	S1M10000043D01
895	E3M10000040B12	2137	E1M10000237B08	3379	E1M10000285G11	4621	S1M10000018C05	5863	S1M10000043F01
896	E3M10000040C12	2138	E1M10000237D08	3380	E1M10000285F12	4622	S1M10000018E05	5864	S1M10000043G01
897	E3M10000040D12	2139	E1M10000237E08	3381	E1M10000286E03	4623	S1M10000018G05	5865	S1M10000043H01

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
898	E3M10000040E12	2140	E1M10000237B09	3382	E1M10000286C12	4624	S1M10000018A06	5866	S1M10000043A02
899	E3M10000040G12	2141	E1M10000237D10	3383	E1M10000287H06	4625	S1M10000018C06	5867	S1M10000043B02
900	E3M10000041C01	2142	E1M10000237E11	3384	E1M10000289D04	4626	S1M10000018F06	5868	S1M10000043C02
901	E3M10000041B02	2143	E1M10000238G01	3385	E1M10000289G12	4627	S1M10000018F07	5869	S1M10000043D02
902	E3M10000041C02	2144	E1M10000238A02	3386	E1M10000293B03	4628	S1M10000018G07	5870	S1M10000043E02
903	E3M10000041D02	2145	E1M10000238F03	3387	E1M10000293G03	4629	S1M10000018H07	5871	S1M10000043A03
904	E3M10000041E02	2146	E1M10000238B04	3388	E1M10000296H06	4630	S1M10000018A08	5872	S1M10000043E03
905	E3M10000041G02	2147	E1M10000238D04	3389	E1M10000299E01	4631	S1M10000018C08	5873	S1M10000043H03
906	E3M10000041A03	2148	E1M10000238F04	3390	E1M10000299E02	4632	S1M10000018E08	5874	S1M10000043A04
907	E3M10000041B03	2149	E1M10000238E05	3391	E1M10000299B03	4633	S1M10000018F08	5875	S1M10000043D04
908	E3M10000041D03	2150	E1M10000238F05	3392	E1M10000299E08	4634	S1M10000018G08	5876	S1M10000043G04
909	E3M10000041E03	2151	E1M10000238D06	3393	E1M10000300D10	4635	S1M10000018A09	5877	S1M10000043H04
910	E3M10000041F03	2152	E1M10000238F06	3394	E1M10000300H10	4636	S1M10000018B09	5878	S1M10000043E05
911	E3M10000041G03	2153	E1M10000238A07	3395	E1M10000300F11	4637	S1M10000018C09	5879	S1M10000043F05
912	E3M10000041C04	2154	E1M10000238A08	3396	E1M10000302H05	4638	S1M10000018D09	5880	S1M10000043G05
913	E3M10000041D04	2155	E1M10000238E08	3397	E1M10000306D03	4639	S1M10000018E09	5881	S1M10000043H05
914	E3M10000041G04	2156	E1M10000238B09	3398	E1M10000307A08	4640	S1M10000018F09	5882	S1M10000043A06
915	E3M10000041H04	2157	E1M10000238G09	3399	E1M10000308B03	4641	S1M10000018G09	5883	S1M10000043H06
916	E3M10000041A05	2158	E1M10000238H09	3400	E1M10000311A02	4642	S1M10000018H09	5884	S1M10000043A07
917	E3M10000041B05	2159	E1M10000238F12	3401	E1M10000311A07	4643	S1M10000018A10	5885	S1M10000043B07
918	E3M10000041D05	2160	E1M10000239B01	3402	E1M10000313E07	4644	S1M10000018B10	5886	S1M10000043C07
919	E3M10000041E05	2161	E1M10000239D01	3403	E1M10000314G03	4645	S1M10000018C10	5887	S1M10000043E07
920	E3M10000041F05	2162	E1M10000239D02	3404	E1M10000314F08	4646	S1M10000018D10	5888	S1M10000043F07
921	E3M10000041H05	2163	E1M10000239C03	3405	E1M10000317H03	4647	S1M10000018F10	5889	S1M10000043A08
922	E3M10000041B06	2164	E1M10000239E04	3406	E1M10000317C04	4648	S1M10000018G10	5890	S1M10000043B08
923	E3M10000041D06	2165	E1M10000239F04	3407	E1M10000317C05	4649	S1M10000018H10	5891	S1M10000043E08
924	E3M10000041F06	2166	E1M10000239C05	3408	K1M10000002F02	4650	S1M10000018A11	5892	S1M10000043F08
925	E3M10000041G06	2167	E1M10000239H05	3409	K1M100000003C01	4651	S1M10000018B11	5893	S1M10000043B09
926	E3M10000041H06	2168	E1M10000239H07	3410	K1M100000004F06	4652	S1M10000018C11	5894	S1M10000043F09
927	E3M10000041A07	2169	E1M10000239A08	3411	K1M100000007F01	4653	S1M10000018D11	5895	S1M10000043G09
928	E3M10000041C07	2170	E1M10000239D08	3412	K1M100000008C10	4654	S1M10000018E11	5896	S1M10000043H09
929	E3M10000041E07	2171	E1M10000239F08	3413	K1M10000013E04	4655	S1M10000018A12	5897	S1M10000043A10
930	E3M10000041F07	2172	E1M10000239H08	3414	K1M10000013E06	4656	S1M10000018C12	5898	S1M10000043B10
931	E3M10000041G07	2173	E1M10000239H10	3415	K1M10000015E05	4657	S1M10000018D12	5899	S1M10000043D10
932	E3M10000041A08	2174	E1M10000239G11	3416	K1M10000019D06	4658	S1M10000018E12	5900	S1M10000043E10
933	E3M10000041B08	2175	E1M10000239G12	3417	K1M10000020B02	4659	S1M10000018F12	5901	S1M10000043G10

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
934	E3M10000041C08	2176	E1M10000240B03	3418	K1M10000022C10	4660	S1M10000018G12	5902	S1M10000043H10
935	E3M10000041D08	2177	E1M10000240D03	3419	K1M10000030C03	4661	S1M10000019B01	5903	S1M10000043A11
936	E3M10000041F08	2178	E1M10000240A04	3420	K1M10000030C04	4662	S1M10000019C01	5904	S1M10000043C11
937	E3M10000041G08	2179	E1M10000240D06	3421	K1M10000030C07	4663	S1M10000019D01	5905	S1M10000043E11
938	E3M10000041H08	2180	E1M10000240G07	3422	K1M10000030E07	4664	S1M10000019E01	5906	S1M10000043H11
939	E3M10000041A09	2181	E1M10000240C08	3423	K1M10000032E11	4665	S1M10000019F01	5907	S1M10000043A12
940	E3M10000041B09	2182	E1M10000240F08	3424	K1M10000033E01	4666	S1M10000019A02	5908	S1M10000043B12
941	E3M10000041C09	2183	E1M10000240B10	3425	K1M10000033B02	4667	S1M10000019D02	5909	S1M10000043C12
942	E3M10000041D09	2184	E1M10000240B11	3426	K1M10000037D10	4668	S1M10000019E02	5910	S1M10000043D12
943	E3M10000041F09	2185	E1M10000240H11	3427	K1M10000038D04	4669	S1M10000019A03	5911	S1M10000043E12
944	E3M10000041G09	2186	E1M10000240B12	3428	K1M10000039A12	4670	S1M10000019B03	5912	S1M10000044B01
945	E3M10000041H09	2187	E1M10000241F01	3429	K1M10000043E02	4671	S1M10000019D03	5913	S1M10000044D01
946	E3M10000041A10	2188	E1M10000241A02	3430	K1M10000043D05	4672	S1M10000019B04	5914	S1M10000044E01
947	E3M10000041B10	2189	E1M10000241H02	3431	K1M10000043H10	4673	S1M10000019C04	5915	S1M10000044A02
948	E3M10000041C10	2190	E1M10000241A04	3432	K1M10000044G05	4674	S1M10000019D04	5916	S1M10000044B02
949	E3M10000041D10	2191	E1M10000241C06	3433	K1M10000045D10	4675	S1M10000019G04	5917	S1M10000044E02
950	E3M10000041E10	2192	E1M10000241F06	3434	P1M10000008G04	4676	S1M10000019A05	5918	S1M10000044F02
951	E3M10000041F10	2193	E1M10000241H07	3435	P1M10000008C06	4677	S1M10000019C05	5919	S1M10000044G02
952	E3M10000041G10	2194	E1M10000241A08	3436	P1M10000010C03	4678	S1M10000019D05	5920	S1M10000044C04
953	E3M10000041H10	2195	E1M10000241B08	3437	P1M10000015C09	4679	S1M10000019F05	5921	S1M10000044D04
954	E3M10000041A11	2196	E1M10000241E08	3438	P1M10000018B01	4680	S1M10000019H05	5922	S1M10000044B05
955	E3M10000041B11	2197	E1M10000241G08	3439	P1M10000018C01	4681	S1M10000019A06	5923	S1M10000044G05
956	E3M10000041C11	2198	E1M10000241A09	3440	P1M10000018E01	4682	S1M10000019C06	5924	S1M10000044H05
957	E3M10000041D11	2199	E1M10000241E09	3441	P1M10000019F01	4683	S1M10000019D06	5925	S1M10000044A06
958	E3M10000041E11	2200	E1M10000241H09	3442	P1M10000019E02	4684	S1M10000019F06	5926	S1M10000044B06
959	E3M10000041F11	2201	E1M10000241B11	3443	P1M10000021G03	4685	S1M10000019A07	5927	S1M10000044C06
960	E3M10000041H11	2202	E1M10000241E12	3444	P1M10000021G05	4686	S1M10000019B07	5928	S1M10000044D06
961	E3M10000041B12	2203	E1M10000242D06	3445	P1M10000022D09	4687	S1M10000019C07	5929	S1M10000044E06
962	E3M10000041C12	2204	E1M10000242F07	3446	P1M10000024H03	4688	S1M10000019D07	5930	S1M10000044F06
963	E3M10000041D12	2205	E1M10000242H07	3447	P1M10000024D06	4689	S1M10000019E07	5931	S1M10000044H06
964	E3M10000041G12	2206	E1M10000242F08	3448	P1M10000024E06	4690	S1M10000019G07	5932	S1M10000044C07
965	E3M10000042B01	2207	E1M10000242E11	3449	P1M10000025G07	4691	S1M10000019A08	5933	S1M10000044E07
966	E3M10000042D01	2208	E1M10000242H11	3450	P1M10000025H07	4692	S1M10000019B08	5934	S1M10000044H07
967	E3M10000042G01	2209	E1M10000242E12	3451	P1M10000026H02	4693	S1M10000019C08	5935	S1M10000044A08
968	E3M10000042A02	2210	E1M10000243F03	3452	P1M10000026F04	4694	S1M10000019F08	5936	S1M10000044B08
969	E3M10000042B02	2211	E1M10000243G03	3453	P1M10000026H05	4695	S1M10000019G08	5937	S1M10000044C08

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
970	E3M10000042C02	2212	E1M10000243B04	3454	P1M10000026E06	4696	S1M10000019H08	5938	S1M10000044D08
971	E3M10000042D02	2213	E1M10000243F04	3455	P1M10000026E09	4697	S1M10000019A09	5939	S1M10000044F08
972	E3M10000042A03	2214	E1M10000243F06	3456	P1M10000026G09	4698	S1M10000019B09	5940	S1M10000044G08
973	E3M10000042C03	2215	E1M10000243F07	3457	P1M10000027B02	4699	S1M10000019D09	5941	S1M10000044H08
974	E3M10000042D03	2216	E1M10000243H07	3458	P1M10000027G05	4700	S1M10000019F09	5942	S1M10000044A09
975	E3M10000042B04	2217	E1M10000243F09	3459	P1M10000027A06	4701	S1M10000019G09	5943	S1M10000044D09
976	E3M10000042C04	2218	E1M10000243B10	3460	P1M10000028B01	4702	S1M10000019B10	5944	S1M10000044E09
977	E3M10000042E05	2219	E1M10000243E11	3461	P1M10000028E02	4703	S1M10000019G10	5945	S1M10000044H09
978	E3M10000042G05	2220	E1M10000244F01	3462	P1M10000028A08	4704	S1M10000019A11	5946	S1M10000044D10
979	E3M10000042D06	2221	E1M10000244C02	3463	P1M10000029G03	4705	S1M10000019B11	5947	S1M10000044E10
980	E3M10000042H06	2222	E1M10000244E02	3464	P1M10000029H05	4706	S1M10000019C11	5948	S1M10000044F10
981	E3M10000042G07	2223	E1M10000244H02	3465	P1M10000029A09	4707	S1M10000019F11	5949	S1M10000044G10
982	E3M10000042A08	2224	E1M10000244B03	3466	P1M10000032F04	4708	S1M10000019G11	5950	S1M10000044H10
983	E3M10000042B08	2225	E1M10000244E03	3467	P1M10000033F01	4709	S1M10000019A12	5951	S1M10000044A11
984	E3M10000042G08	2226	E1M10000244F03	3468	P1M10000033A02	4710	S1M10000019B12	5952	S1M10000044B11
985	E3M10000042H08	2227	E1M10000244A04	3469	P1M10000033E03	4711	S1M10000019C12	5953	S1M10000044C11
986	E3M10000042B09	2228	E1M10000244D04	3470	P1M10000033D06	4712	S1M10000019D12	5954	S1M10000044D11
987	E3M10000042D09	2229	E1M10000244E04	3471	P1M10000033B08	4713	S1M10000020E01	5955	S1M10000044E11
988	E3M10000042A10	2230	E1M10000244G07	3472	P1M10000035A06	4714	S1M10000020F01	5956	S1M10000044G11
989	E3M10000042B10	2231	E1M10000244D08	3473	P1M10000037B12	4715	S1M10000020G01	5957	S1M10000044H11
990	E3M10000042C10	2232	E1M10000244E08	3474	P1M10000037G12	4716	S1M10000020H01	5958	S1M10000044A12
991	E3M10000042E10	2233	E1M10000244G08	3475	P1M10000038G02	4717	S1M10000020B02	5959	S1M10000044B12
992	E3M10000042B11	2234	E1M10000244B09	3476	P1M10000038C03	4718	S1M10000020H02	5960	S1M10000044C12
993	E3M10000042D11	2235	E1M10000244E10	3477	P1M10000038F04	4719	S1M10000020B03	5961	S1M10000044D12
994	E3M10000042F11	2236	E1M10000244E11	3478	P1M10000038C06	4720	S1M10000020D03	5962	S1M10000045B01
995	E3M10000042G11	2237	E1M10000244F11	3479	P1M10000038B08	4721	S1M10000020E03	5963	S1M10000045D01
996	E3M10000042H11	2238	E1M10000244C12	3480	P1M10000038A09	4722	S1M10000020D04	5964	S1M10000045A02
997	E3M10000042D12	2239	E1M10000244E12	3481	P1M10000039G05	4723	S1M10000020E04	5965	S1M10000045B02
998	E3M10000042E12	2240	E1M10000244F12	3482	P1M10000039G12	4724	S1M10000020H04	5966	S1M10000045C02
999	E3M10000042F12	2241	E1M10000245C01	3483	P1M10000040C01	4725	S1M10000020A05	5967	S1M10000045B03
1000	E3M10000042G12	2242	E1M10000245E02	3484	P1M10000040H03	4726	S1M10000020B05	5968	S1M10000045C03
1001	E3M10000043B01	2243	E1M10000245E03	3485	P1M10000040C04	4727	S1M10000020F05	5969	S1M10000045D03
1002	E3M10000043C01	2244	E1M10000245H03	3486	P1M10000040D04	4728	S1M10000020G05	5970	S1M10000045G03
1003	E3M10000043D01	2245	E1M10000245A04	3487	P1M10000040D05	4729	S1M10000020A06	5971	S1M10000045C04
1004	E3M10000043A02	2246	E1M10000245B04	3488	P1M10000040E10	4730	S1M10000020B06	5972	S1M10000045E04
1005	E3M10000043B02	2247	E1M10000245D04	3489	P1M10000041E01	4731	S1M10000020D06	5973	S1M10000045F04

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
1006	E3M10000043D02	2248	E1M10000245B05	3490	P1M10000041F01	4732	S1M10000020E06	5974	S1M10000045C05
1007	E3M10000043H02	2249	E1M10000245C05	3491	P1M10000041B02	4733	S1M10000020F06	5975	S1M10000045E05
1008	E3M10000043A03	2250	E1M10000245D05	3492	P1M10000041A12	4734	S1M10000020H06	5976	S1M10000045F05
1009	E3M10000043B03	2251	E1M10000245F06	3493	P1M10000042E08	4735	S1M10000020A07	5977	S1M10000045A06
1010	E3M10000043E03	2252	E1M10000245B07	3494	P1M10000042B12	4736	S1M10000020B07	5978	S1M10000045G06
1011	E3M10000043F03	2253	E1M10000245E09	3495	P1M10000043A03	4737	S1M10000020D07	5979	S1M10000045H06
1012	E3M10000043G03	2254	E1M10000245G09	3496	P1M10000043H04	4738	S1M10000020F07	5980	S1M10000045A07
1013	E3M10000043F04	2255	E1M10000245B11	3497	P1M10000043D06	4739	S1M10000020G07	5981	S1M10000045B07
1014	E3M10000043G04	2256	E1M10000245C11	3498	P1M10000044F07	4740	S1M10000020A08	5982	S1M10000045C07
1015	E3M10000043A05	2257	E1M10000245D11	3499	P1M10000046B03	4741	S1M10000020D08	5983	S1M10000045D07
1016	E3M10000043G05	2258	E1M10000245E11	3500	P1M10000046C07	4742	S1M10000020E08	5984	S1M10000045G07
1017	E3M10000043H05	2259	E1M10000245H11	3501	P1M10000046C08	4743	S1M10000020G08	5985	S1M10000045A08
1018	E3M10000043B06	2260	E1M10000245B12	3502	P1M10000046C09	4744	S1M10000020H08	5986	S1M10000045D08
1019	E3M10000043F06	2261	E1M10000245D12	3503	P1M10000046G11	4745	S1M10000020B09	5987	S1M10000045E08
1020	E3M10000043H06	2262	E1M10000245E12	3504	P1M10000047H02	4746	S1M10000020C09	5988	S1M10000045F08
1021	E3M10000043E07	2263	E1M10000246F01	3505	P1M10000047B04	4747	S1M10000020F09	5989	S1M10000045G08
1022	E3M10000043G07	2264	E1M10000246B02	3506	P1M10000047F07	4748	S1M10000020G09	5990	S1M10000045C09
1023	E3M10000043A08	2265	E1M10000246D03	3507	P1M10000047G10	4749	S1M10000020C10	5991	S1M10000045D09
1024	E3M10000043B08	2266	E1M10000246E03	3508	P1M10000047E11	4750	S1M10000020G10	5992	S1M10000045E09
1025	E3M10000043C08	2267	E1M10000246G03	3509	P1M10000048A03	4751	S1M10000020H10	5993	S1M10000045B10
1026	E3M10000043E08	2268	E1M10000246C05	3510	P1M10000049E08	4752	S1M10000020A11	5994	S1M10000045D10
1027	E3M10000043F08	2269	E1M10000246A06	3511	P1M10000049G10	4753	S1M10000020C11	5995	S1M10000045E10
1028	E3M10000043G08	2270	E1M10000246B06	3512	P1M10000050G11	4754	S1M10000020E11	5996	S1M10000045G10
1029	E3M10000043H08	2271	E1M10000246D06	3513	P1M10000051F01	4755	S1M10000020F11	5997	S1M10000045H10
1030	E3M10000043A09	2272	E1M10000246C07	3514	P1M10000051D11	4756	S1M10000020G11	5998	S1M10000045A11
1031	E3M10000043C09	2273	E1M10000246F07	3515	P1M10000052C03	4757	S1M10000020H11	5999	S1M10000045B11
1032	E3M10000043D09	2274	E1M10000246A08	3516	P1M10000052E04	4758	S1M10000020A12	6000	S1M10000045D11
1033	E3M10000043H09	2275	E1M10000246D09	3517	P1M10000052C12	4759	S1M10000020B12	6001	S1M10000045E11
1034	E3M10000043A10	2276	E1M10000246E10	3518	P1M10000053C02	4760	S1M10000020D12	6002	S1M10000045F11
1035	E3M10000043B10	2277	E1M10000246B11	3519	P1M10000053E07	4761	S1M10000020E12	6003	S1M10000045H11
1036	E3M10000043C10	2278	E1M10000246F11	3520	P1M10000053F08	4762	S1M10000020F12	6004	S1M10000045A12
1037	E3M10000043D10	2279	E1M10000247B01	3521	P1M10000053B12	4763	S1M10000020G12	6005	S1M10000045B12
1038	E3M10000043E10	2280	E1M10000247E01	3522	P1M10000055E05	4764	S1M10000021D01	6006	S1M10000045C12
1039	E3M10000043F10	2281	E1M10000247G01	3523	P1M10000055C08	4765	S1M10000021E01	6007	S1M10000045D12
1040	E3M10000043G10	2282	E1M10000247E02	3524	P1M10000055A11	4766	S1M10000021G01	6008	S1M10000045E12
1041	E3M10000043A11	2283	E1M10000247A03	3525	P1M10000056G01	4767	S1M10000021E02	6009	S1M10000045F12

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
1042	E3M10000043B11	2284	E1M10000247D03	3526	P1M10000056F02	4768	S1M10000021F02	6010	S1M10000045G12
1043	E3M10000043E11	2285	E1M10000247G03	3527	P1M10000056F05	4769	S1M10000021D03	6011	S1M10000046B01
1044	E3M10000043G11	2286	E1M10000247B04	3528	P1M10000056F06	4770	S1M10000021E03	6012	S1M10000046D01
1045	E3M10000043H11	2287	E1M10000247H04	3529	P1M10000056C07	4771	S1M10000021G03	6013	S1M10000046E01
1046	E3M10000043B12	2288	E1M10000247D05	3530	P1M10000058B07	4772	S1M10000021A04	6014	S1M10000046F01
1047	E3M10000043D12	2289	E1M10000247A06	3531	P1M10000061B04	4773	S1M10000021C04	6015	S1M10000046G01
1048	E3M10000043F12	2290	E1M10000247B06	3532	P1M10000061E04	4774	S1M10000021D04	6016	S1M10000046H01
1049	E3M10000043G12	2291	E1M10000247G06	3533	P1M10000061F04	4775	S1M10000021F04	6017	S1M10000046C02
1050	E3M10000044E01	2292	E1M10000247G07	3534	P1M10000062H01	4776	S1M10000021H04	6018	S1M10000046D02
1051	E3M10000044C02	2293	E1M10000247D08	3535	P1M10000062C03	4777	S1M10000021A05	6019	S1M10000046E02
1052	E3M10000045E07	2294	E1M10000247F09	3536	P1M10000062C04	4778	S1M10000021B05	6020	S1M10000046F02
1053	E3M10000046C04	2295	E1M10000247C11	3537	P1M10000062H04	4779	S1M10000021C05	6021	S1M10000046G02
1054	E3M10000047D02	2296	E1M10000247E11	3538	P1M10000062F06	4780	S1M10000021F05	6022	S1M10000046A03
1055	E3M10000047B08	2297	E1M10000247B12	3539	P1M10000062C07	4781	S1M10000021H05	6023	S1M10000046B03
1056	E3M10000047C08	2298	E1M10000248G01	3540	P1M10000062D07	4782	S1M10000021A06	6024	S1M10000046D03
1057	E3M10000047D08	2299	E1M10000248A02	3541	P1M10000062D08	4783	S1M10000021B06	6025	S1M10000046G03
1058	E3M10000050B01	2300	E1M10000248E04	3542	P1M10000062E08	4784	S1M10000021D06	6026	S1M10000046A04
1059	E3M10000050C01	2301	E1M10000248H04	3543	P1M10000062G11	4785	S1M10000021E06	6027	S1M10000046B04
1060	E3M10000050D01	2302	E1M10000248H05	3544	P1M10000062A12	4786	S1M10000021F06	6028	S1M10000046C04
1061	E3M10000050B02	2303	E1M10000248A06	3545	P1M10000062C12	4787	S1M10000021G06	6029	S1M10000046D04
1062	E3M10000050C02	2304	E1M10000248G06	3546	P1M10000063F02	4788	S1M10000021A07	6030	S1M10000046E04
1063	E3M10000050E02	2305	E1M10000248H08	3547	P1M10000063G02	4789	S1M10000021B07	6031	S1M10000046G04
1064	E3M10000050F02	2306	E1M10000248B12	3548	P1M10000063H02	4790	S1M10000021C07	6032	S1M10000046B05
1065	E3M10000050H04	2307	E1M10000249E01	3549	P1M10000064C02	4791	S1M10000021F07	6033	S1M10000046C05
1066	E3M10000050B05	2308	E1M10000249G01	3550	P1M10000064C03	4792	S1M10000021H07	6034	S1M10000046D05
1067	E3M10000050D05	2309	E1M10000249D02	3551	P1M10000064D03	4793	S1M10000021A08	6035	S1M10000046F05
1068	E3M10000050E05	2310	E1M10000249F02	3552	P1M10000064E05	4794	S1M10000021C08	6036	S1M10000046A06
1069	E3M10000050G05	2311	E1M10000249F03	3553	P1M10000064H07	4795	S1M10000021G08	6037	S1M10000046C06
1070	E3M10000050H05	2312	E1M10000249H04	3554	P1M10000064A10	4796	S1M10000021H08	6038	S1M10000046F06
1071	E3M10000050A06	2313	E1M10000249G05	3555	P1M10000064G12	4797	S1M10000021A09	6039	S1M10000046B07
1072	E3M10000050C06	2314	E1M10000249C06	3556	P1M10000065F01	4798	S1M10000021D09	6040	S1M10000046C07
1073	E3M10000050D06	2315	E1M10000249D06	3557	P1M10000065C03	4799	S1M10000021E09	6041	S1M10000046E07
1074	E3M10000050F06	2316	E1M10000249A07	3558	P1M10000065A04	4800	S1M10000021F09	6042	S1M10000046G07
1075	E3M10000050H06	2317	E1M10000249C07	3559	P1M10000065C05	4801	S1M10000021A10	6043	S1M10000046A08
1076	E3M10000050A07	2318	E1M10000249B08	3560	P1M10000065D06	4802	S1M10000021B10	6044	S1M10000046B08
1077	E3M10000050B07	2319	E1M10000249F08	3561	P1M10000065G06	4803		6045	S1M10000046C08

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
1078	E3M10000050C07	2320	E1M10000249B09	3562	P1M10000065B07	4804	S1M10000021C10	6046	S1M10000046D08
1079	E3M10000050E07	2321	E1M10000249C09	3563	P1M10000065H07	4805	S1M10000021D10	6047	S1M10000046E08
1080	E3M10000050F07	2322	E1M10000249H09	3564	P1M10000066F04	4806	S1M10000021C11	6048	S1M10000046F08
1081	E3M10000050H07	2323	E1M10000249E10	3565	P1M10000066A10	4807	S1M10000021F11	6049	S1M10000046A09
1082	E3M10000050B08	2324	E1M10000249D11	3566	P1M10000066A11	4808	S1M10000021H11	6050	S1M10000046B09
1083	E3M10000050D08	2325	E1M10000249H11	3567	P1M10000067C01	4809	S1M10000021C12	6051	S1M10000046D09
1084	E3M10000050F08	2326	E1M10000250F02	3568	P1M10000067E01	4810	S1M10000021E12	6052	S1M10000046F09
1085	E3M10000050G08	2327	E1M10000250H02	3569	P1M10000067C04	4811	S1M10000021G12	6053	S1M10000046G09
1086	E3M10000050D09	2328	E1M10000250E03	3570	P1M10000067A05	4812	S1M10000022E01	6054	S1M10000046D10
1087	E3M10000050F09	2329	E1M10000250G03	3571	P1M10000067D05	4813	S1M10000022A02	6055	S1M10000046E10
1088	E3M10000050G09	2330	E1M10000250A04	3572	P1M10000067F05	4814	S1M10000022B02	6056	S1M10000046F10
1089	E3M10000050H09	2331	E1M10000250E04	3573	P1M10000067G05	4815	S1M10000022C02	6057	S1M10000046G10
1090	E3M10000050B10	2332	E1M10000250H04	3574	P1M10000067A06	4816	S1M10000022A03	6058	S1M10000046H10
1091	E3M10000051C01	2333	E1M10000250A05	3575	P1M10000067C06	4817	S1M10000022B03	6059	S1M10000046A11
1092	E3M10000051D01	2334	E1M10000250E05	3576	P1M10000067A08	4818	S1M10000022C03	6060	S1M10000046B11
1093	E3M10000051C03	2335	E1M10000250G07	3577	P1M10000068G01	4819	S1M10000022D03	6061	S1M10000046C11
1094	E3M10000051D03	2336	E1M10000250D09	3578	P1M10000068D04	4820	S1M10000022E03	6062	S1M10000046D11
1095	E3M10000051H03	2337	E1M10000250G09	3579	P1M10000068F04	4821	S1M10000022G03	6063	S1M10000046A12
1096	E3M10000051A04	2338	E1M10000250B10	3580	P1M10000068H05	4822	S1M10000022H03	6064	S1M10000046B12
1097	E3M10000051B04	2339	E1M10000250E10	3581	P1M10000068F08	4823	S1M10000022C04	6065	S1M10000046C12
1098	E3M10000051D04	2340	E1M10000250D11	3582	P1M10000068A09	4824	S1M10000022F04	6066	S1M10000046D12
1099	E3M10000051E04	2341	E1M10000250H11	3583	P1M10000069H02	4825	S1M10000022G04	6067	S1M10000046F12
1100	E3M10000051F04	2342	E1M10000250G12	3584	P1M10000069B05	4826	S1M10000022A05	6068	S1M10000047B01
1101	E3M10000051F05	2343	E1M10000251A02	3585	P1M10000069G06	4827	S1M10000022B05	6069	S1M10000047C01
1102	E3M10000051C06	2344	E1M10000251D04	3586	P1M10000069D09	4828	S1M10000022D05	6070	S1M10000047E01
1103	E3M10000051D06	2345	E1M10000251F04	3587	P1M10000070E03	4829	S1M10000022E05	6071	S1M10000047G01
1104	E3M10000051F06	2346	E1M10000251H04	3588	P1M10000070A05	4830	S1M10000022H05	6072	S1M10000047B02
1105	E3M10000051G06	2347	E1M10000251F05	3589	P1M10000070C06	4831	S1M10000022B06	6073	S1M10000047C02
1106	E3M10000051B07	2348	E1M10000251A07	3590	P1M10000070G06	4832	S1M10000022C06	6074	S1M10000047D02
1107	E3M10000051E07	2349	E1M10000251C07	3591	P1M10000070H06	4833	S1M10000022D06	6075	S1M10000047E02
1108	E3M10000051F07	2350	E1M10000251B08	3592	P1M10000070D08	4834	S1M10000022F06	6076	S1M10000047F02
1109	E3M10000051A08	2351	E1M10000251H08	3593	P1M10000070B10	4835	S1M10000022H06	6077	S1M10000047G02
1110	E3M10000051B08	2352	E1M10000251H09	3594	P1M10000070G12	4836	S1M10000022B07	6078	S1M10000047A03
1111	E3M10000051D08	2353	E1M10000251C10	3595	P1M10000071B01	4837	S1M10000022C07	6079	S1M10000047C03
1112	E3M10000051H08	2354	E1M10000251F11	3596	P1M10000071C01	4838	S1M10000022D07	6080	S1M10000047D03
1113	E3M10000051B09	2355	E1M10000251G11	3597	P1M10000071F01	4839	S1M10000022F07	6081	S1M10000047E03

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
1114	E3M10000051C09	2356	E1M10000251C12	3598	P1M10000071A03	4840	S1M10000022G07	6082	S1M10000047F03
1115	E3M10000051D09	2357	E1M10000251D12	3599	P1M10000071E04	4841	S1M10000022H07	6083	S1M10000047G03
1116	E3M10000051E09	2358	E1M10000251F12	3600	P1M10000073G03	4842	S1M10000022A08	6084	S1M10000047H03
1117	E3M10000051G09	2359	E1M10000252D01	3601	P1M10000073D04	4843	S1M10000022B08	6085	S1M10000047A04
1118	E3M10000051H09	2360	E1M10000252G02	3602	P1M10000073A06	4844	S1M10000022C08	6086	S1M10000047B04
1119	E3M10000051A10	2361	E1M10000252C03	3603	P1M10000073D09	4845	S1M10000022D08	6087	S1M10000047C04
1120	E3M10000051B10	2362	E1M10000252G03	3604	P1M10000073B10	4846	S1M10000022F08	6088	S1M10000047D04
1121	E3M10000051D10	2363	E1M10000252B04	3605	P1M10000074B01	4847	S1M10000022G08	6089	S1M10000047E04
1122	E3M10000051E10	2364	E1M10000252E04	3606	P1M10000074B04	4848	S1M10000022H08	6090	S1M10000047F04
1123	E3M10000051F10	2365	E1M10000252F04	3607	P1M10000074E04	4849	S1M10000022D09	6091	S1M10000047G04
1124	E3M10000051H10	2366	E1M10000252A05	3608	P1M10000074E09	4850	S1M10000022E09	6092	S1M10000047H04
1125	E3M10000051A11	2367	E1M10000252A06	3609	P1M10000074F10	4851	S1M10000022B10	6093	S1M10000047A05
1126	E3M10000051D11	2368	E1M10000252D06	3610	P1M10000074G12	4852	S1M10000022B11	6094	S1M10000047B05
1127	E3M10000051E11	2369	E1M10000252A07	3611	P1M10000075F02	4853	S1M10000022C11	6095	S1M10000047C05
1128	E3M10000051F11	2370	E1M10000252H07	3612	P1M10000075B03	4854	S1M10000022D11	6096	S1M10000047D05
1129	E3M10000051G11	2371	E1M10000252A09	3613	P1M10000075A04	4855	S1M10000022F11	6097	S1M10000047E05
1130	E3M10000051F12	2372	E1M10000252E09	3614	P1M10000075C04	4856	S1M10000022H11	6098	S1M10000047F05
1131	E3M10000050E01	2373	E1M10000252B10	3615	P1M10000075C05	4857	S1M10000022A12	6099	S1M10000047G05
1132	E3M10000050G01	2374	E1M10000252D10	3616	P1M10000075G05	4858	S1M10000022B12	6100	S1M10000047H05
1133	E3M10000050B03	2375	E1M10000252E10	3617	P1M10000076D05	4859	S1M10000022G12	6101	S1M10000047A06
1134	E3M10000050C03	2376	E1M10000252E11	3618	P1M10000076C08	4860	S1M10000023B01	6102	S1M10000047B06
1135	E3M10000050D03	2377	E1M10000252E12	3619	P1M10000076D10	4861	S1M10000023D01	6103	S1M10000047C06
1136	E3M10000050E03	2378	E1M10000253A02	3620	P1M10000077E04	4862	S1M10000023E01	6104	S1M10000047E06
1137	E3M10000050A04	2379	E1M10000253G02	3621	P1M10000077H05	4863	S1M10000023G01	6105	S1M10000047F06
1138	E3M10000050E04	2380	E1M10000253C04	3622	P1M10000077A08	4864	S1M10000023C02	6106	S1M10000047G06
1139	E3M10000050H08	2381	E1M10000253D04	3623	P1M10000077C08	4865	S1M10000023G02	6107	S1M10000047A07
1140	E3M10000052C01	2382	E1M10000253F04	3624	P1M10000096F01	4866	S1M10000023H02	6108	S1M10000047C07
1141	E3M10000052F01	2383	E1M10000253H05	3625	P1M10000096E04	4867	S1M10000023B03	6109	S1M10000047D07
1142	E3M10000052C02	2384	E1M10000253D08	3626	P1M10000096E12	4868	S1M10000023D03	6110	S1M10000047F07
1143	E3M10000052D02	2385	E1M10000253E08	3627	P1M10000097G05	4869	S1M10000023G03	6111	S1M10000047G07
1144	E3M10000052G02	2386	E1M10000253A09	3628	P1M10000059B04	4870	S1M10000023D04	6112	S1M10000047H07
1145	E3M10000052B03	2387	E1M10000253D09	3629	P1M10000059H08	4871	S1M10000023E04	6113	S1M10000047A08
1146	E3M10000052E03	2388	E1M10000253E09	3630	P1M10000059H09	4872	S1M10000023F04	6114	S1M10000047B08
1147	E3M10000052G03	2389	E1M10000253F09	3631	P1M10000059B10	4873	S1M10000023A05	6115	S1M10000047C08
1148	E3M10000052B04	2390	E1M10000253G09	3632	P1M10000059B11	4874	S1M10000023D05	6116	S1M10000047E08
1149	E3M10000052F04	2391	E1M10000253A10	3633	P1M10000059D11	4875	S1M10000023H05	6117	S1M10000047F08

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
1150	E3M10000052G04	2392	E1M10000253C10	3634	P1M10000060H02	4876	S1M10000023G06	6118	S1M10000047G08
1151	E3M10000052C05	2393	E1M10000253D10	3635	P1M10000060E03	4877	S1M10000023H06	6119	S1M10000047H08
1152	E3M10000052D05	2394	E1M10000253B11	3636	P1M10000060H04	4878	S1M10000023B07	6120	S1M10000047A09
1153	E3M10000052F05	2395	E1M10000253F11	3637	P1M10000079D01	4879	S1M10000023D07	6121	S1M10000047B09
1154	E3M10000052G05	2396	E1M10000253D12	3638	P1M10000079F06	4880	S1M10000023E07	6122	S1M10000047C09
1155	E3M10000052G06	2397	E1M10000253G12	3639	P1M10000079A10	4881	S1M10000023F07	6123	S1M10000047D09
1156	E3M10000052H06	2398	E1M10000254A03	3640	P1M10000079B10	4882	S1M10000023G07	6124	S1M10000047E09
1157	E3M10000052B07	2399	E1M10000254B03	3641	P1M10000079C10	4883	S1M10000023H07	6125	S1M10000047F09
1158	E3M10000052F08	2400	E1M10000254C03	3642	P1M10000079D10	4884	S1M10000023B08	6126	S1M10000047G09
1159	E3M10000052E09	2401	E1M10000254F03	3643	P1M10000080B01	4885	S1M10000023D08	6127	S1M10000047H09
1160	E3M10000052G09	2402	E1M10000254A04	3644	P1M10000080C01	4886	S1M10000023F08	6128	S1M10000047A10
1161	E3M10000052F10	2403	E1M10000254G05	3645	P1M10000080E04	4887	S1M10000023G08	6129	S1M10000047B10
1162	E3M10000052D11	2404	E1M10000254H05	3646	P1M10000080B06	4888	S1M10000023A09	6130	S1M10000047D10
1163	E3M10000052D12	2405	E1M10000254B06	3647	P1M10000080C06	4889	S1M10000023B09	6131	S1M10000047E10
1164	1008-H20	2406	E1M10000254A07	3648	P1M10000081G05	4890	S1M10000023D09	6132	S1M10000047F10
1165	1011-P20	2407	E1M10000254E07	3649	P1M10000081H05	4891	S1M10000023G09	6133	S1M10000047G10
1166	1053-37	2408	E1M10000254G07	3650	P1M10000081A06	4892	S1M10000023H09	6134	S1M10000047H10
1167	1010-C11	2409	E1M10000254A08	3651	P1M10000081D12	4893	S1M10000023B10	6135	S1M10000047A11
1168	1017-H1	2410	E1M10000254B09	3652	P1M10000082A02	4894	S1M10000023C10	6136	S1M10000047B11
1169	1067-16	2411	E1M10000254F10	3653	P1M10000082B04	4895	S1M10000023D10	6137	S1M10000047C11
1170	1083-27	2412	E1M10000254A11	3654	P1M10000082A05	4896	S1M10000023E10	6138	S1M10000047E11
1171	1065-12	2413	E1M10000254C11	3655	P1M10000082C05	4897	S1M10000023F10	6139	S1M10000047F11
1172	221-41	2414	E1M10000254E12	3656	P1M10000082D05	4898	S1M10000023H10	6140	S1M10000047H11
1173	B17-6.O10	2415	E1M10000255C01	3657	P1M10000082E05	4899	S1M10000023A11	6141	S1M10000047A12
1174	910-B20	2416	E1M10000255G02	3658	P1M10000083B01	4900	S1M10000023B11	6142	S1M10000047B12
1175	B18-2.N21	2417	E1M10000255H02	3659	P1M10000083A11	4901	S1M10000023C11	6143	S1M10000047C12
1176	971-B20	2418	E1M10000255A04	3660	P1M10000083B12	4902	S1M10000023E11	6144	S1M10000047D12
1177	D1-1.A15	2419	E1M10000255D05	3661	P1M10000083C12	4903	S1M10000023F11	6145	S1M10000047E12
1178	4-28.1	2420	E1M10000255F06	3662	P1M10000084D03	4904	S1M10000023G11	6146	S1M10000047F12
1179	D1-2.B13	2421	E1M10000255G06	3663	P1M10000084A04	4905	S1M10000023A12	6147	S1M10000048C01
1180	D1-2.P21	2422	E1M10000255B08	3664	P1M10000084E04	4906	S1M10000023B12	6148	S1M10000048D01
1181	Z56-D2	2423	E1M10000255D09	3665	P1M10000084F08	4907	S1M10000023C12	6149	S1M10000048G01
1182	PJMF55	2424	E1M10000255F09	3666	P1M10000084E11	4908	S1M10000023D12	6150	S1M10000048H01
1183	R1-15.A13	2425	E1M10000255B10	3667	P1M10000085D06	4909	S1M10000023F12	6151	S1M10000048A02
1184	R1-19.H1	2426	E1M10000256F01	3668	P1M10000086B01	4910	S1M10000024D01	6152	S1M10000048B02
1185	R1-55.M2	2427	E1M10000256B02	3669	P1M10000086E01	4911	S1M10000024A02	6153	S1M10000048C02

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
1186	Z45-F11	2428	EIM10000256D02	3670	PIM10000086A02	4912	SIM10000024C02	6154	SIM10000048D02
1187	Z8-B9	2429	EIM10000256A04	3671	PIM10000086D02	4913	SIM10000024D02	6155	SIM10000048E02
1188	EIM10000007B04	2430	EIM10000256C05	3672	PIM10000086E05	4914	SIM10000024F02	6156	SIM10000048F02
1189	227-10	2431	EIM10000256E07	3673	PIM10000087E04	4915	SIM10000024H02	6157	SIM10000048G02
1190	709-F23	2432	EIM10000256E09	3674	PIM10000087F04	4916	SIM10000024D03	6158	SIM10000048H02
1191	801-C15	2433	EIM10000256A10	3675	PIM10000087C09	4917	SIM10000024E03	6159	SIM10000048A03
1192	801-H19	2434	EIM10000256F10	3676	PIM10000087F09	4918	SIM10000024F03	6160	SIM10000048B03
1193	804-P6	2435	EIM10000256C12	3677	PIM10000087A11	4919	SIM10000024A04	6161	SIM10000048C03
1194	807-D20	2436	EIM10000257C01	3678	PIM10000088C04	4920	SIM10000024C04	6162	SIM10000048E03
1195	B13-17.G8	2437	EIM10000257G01	3679	PIM10000088A07	4921	SIM10000024D04	6163	SIM10000048F03
1196	B5-6.C8	2438	EIM10000257A02	3680	PIM10000089G08	4922	SIM10000024H04	6164	SIM10000048G03
1197	B8-2.D9	2439	EIM10000257D02	3681	PIM10000089D11	4923	SIM10000024B05	6165	SIM10000048H03
1198	B15-8.P13	2440	EIM10000257H02	3682	PIM10000090E01	4924	SIM10000024E05	6166	SIM10000048E04
1199	T13-5.A2	2441	EIM10000257C03	3683	PIM10000090F06	4925	SIM10000024F05	6167	SIM10000048G04
1200	T12-3.I11	2442	EIM10000257F04	3684	PIM10000090F08	4926	SIM10000024G05	6168	SIM10000048H04
1201	T20-15.D4	2443	EIM10000257G04	3685	PIM10000090B11	4927	SIM10000024B06	6169	SIM10000048A05
1202	T24-15.G6	2444	EIM10000257B05	3686	PIM10000091A09	4928	SIM10000024E06	6170	SIM10000048B05
1203	T24-17.C6	2445	EIM10000257D05	3687	PIM10000091E09	4929	SIM10000024G06	6171	SIM10000048C05
1204	244.B12	2446	EIM10000257F06	3688	PIM10000091G10	4930	SIM10000024H06	6172	SIM10000048F05
1205	1042-J1	2447	EIM10000257G07	3689	PIM10000092B02	4931	SIM10000024A07	6173	SIM10000048G05
1206	195.F5	2448	EIM10000257H07	3690	PIM10000092E02	4932	SIM10000024C07	6174	SIM10000048H05
1207	25.D5	2449	EIM10000257H08	3691	PIM10000092B04	4933	SIM10000024E07	6175	SIM10000048A06
1208	25.D6	2450	EIM10000257A09	3692	PIM10000092F05	4934	SIM10000024G07	6176	SIM10000048B06
1209	177.F3	2451	EIM10000257D09	3693	PIM10000092F06	4935	SIM10000024H07	6177	SIM10000048C06
1210	525.H11	2452	EIM10000257G10	3694	PIM10000092D09	4936	SIM10000024A08	6178	SIM10000048E06
1211	632.N2	2453	EIM10000257H10	3695	PIM10000092B10	4937	SIM10000024B08	6179	SIM10000048A07
1212	633.B7	2454	EIM10000257A11	3696	PIM10000092B12	4938	SIM10000024E08	6180	SIM10000048C07
1213	671.I20	2455	EIM10000257C11	3697	PIM10000093A03	4939	SIM10000024F08	6181	SIM10000048E07
1214	676.B12	2456	EIM10000257F11	3698	PIM10000093B03	4940	SIM10000024G08	6182	SIM10000048F07
1215	643.B19	2457	EIM10000257B12	3699	PIM10000093F03	4941	SIM10000024H08	6183	SIM10000048G07
1216	720.O16	2458	EIM10000257F12	3700	PIM10000093H07	4942	SIM10000024B09	6184	SIM10000048H07
1217	666.H12	2459	EIM10000258C01	3701	PIM10000093C08	4943	SIM10000024B10	6185	SIM10000048B08
1218	98.D4	2460	EIM10000258H02	3702	PIM10000093B09	4944	SIM10000024D10	6186	SIM10000048C08
1219	844.B21	2461	EIM10000258G03	3703	PIM10000093E09	4945	SIM10000024F10	6187	SIM10000048D08
1220	P31-25-F3	2462	EIM10000258A04	3704	PIM10000094H03	4946	SIM10000024G10	6188	SIM10000048E08
1221	P335-8.H8	2463	EIM10000258C04	3705	PIM10000094F04	4947	SIM10000024A11	6189	SIM10000048F08

SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name	SeqID	Clone Name
1222	P347.2	2464	E1M10000258G04	3706	P1M10000094H04	4948	S1M10000024D11	6190	S1M10000048H08
1223	P31-11-J20	2465	E1M10000258C05	3707	P1M10000094A10	4949	S1M10000024G12	6191	S1M10000048A09
1224	P336-14.F20	2466	E1M10000258D05	3708	P1M10000095C01	4950	S1M10000025B01	6192	S1M10000048C09
1225	P31-27-M1	2467	E1M10000258F05	3709	P1M10000095E04	4951	S1M10000025C01	6193	S1M10000048D09
1226	P338-4.M21	2468	E1M10000258G05	3710	P1M10000095G04	4952	S1M10000025D01	6194	S1M10000048E09
1227	P334-8.L7	2469	E1M10000258A06	3711	P1M10000095C09	4953	S1M10000025E01	6195	S1M10000048F09
1228	P31-2-E16	2470	E1M10000258D06	3712	P1M10000102E05	4954	S1M10000025B02	6196	S1M10000048H09
1229	P335-3.J14	2471	E1M10000258B07	3713	P1M10000102B07	4955	S1M10000025A03	6197	S1M10000048A10
1230	P334-5.H2	2472	E1M10000258G07	3714	P1M10000103B05	4956	S1M10000025B03	6198	S1M10000048B10
1231	P31-33-N2	2473	E1M10000258G08	3715	P1M10000103D06	4957	S1M10000025C03	6199	S1M10000048C10
1232	P332-11.C20	2474	E1M10000258B09	3716	P1M10000103E08	4958	S1M10000025D03	6200	S1M10000048D10
1233	869.A23	2475	E1M10000258D09	3717	P1M10000104A02	4959	S1M10000025F03	6201	S1M10000048E10
1234	P317-2.A3	2476	E1M10000258F10	3718	P1M10000104H02	4960	S1M10000025D04	6202	S1M10000048G10
1235	P326-9.K2	2477	E1M10000258C11	3719	P1M10000104A03	4961	S1M10000025E04	6203	S1M10000048H10
1236	P323-8.P1	2478	E1M10000258F11	3720	P1M10000104E03	4962	S1M10000025G04	6204	S1M10000048A11
1237	P35-8	2479	E1M10000259C03	3721	P1M10000104F07	4963	S1M10000025B05	6205	S1M10000048C11
1238	P36-13.E2	2480	E1M10000259B04	3722	P1M10000104D11	4964	S1M10000025C05	6206	S1M10000048D11
1239	P38-1.G20	2481	E1M10000259E04	3723	P1M10000105D01	4965	S1M10000025F05	6207	S1M10000048F11
1240	P327-50.M10	2482	E1M10000259E05	3724	P1M10000105E02	4966	S1M10000025H05	6208	S1M10000048G11
1241	P328-8.D21	2483	E1M10000259B12	3725	P1M10000105C03	4967	S1M10000025B06	6209	S1M10000048H11
1242	P328-20.P20	2484	E1M10000260E02	3726	P1M10000105G03	4968	S1M10000025D06	6210	S1M10000048A12

EXAMPLE 3

Comparison Of Isolated Nucleic Acids to Known Sequences

The nucleotide sequences of the subcloned fragments from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* and *Salmonella typhimurium* obtained from the expression vectors discussed above were compared to known sequences from *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Salmonella typhimurium* and other microorganisms as follows. First, to confirm that each clone originated from one location on the chromosome and was not chimeric, the nucleotide sequences of the selected clones were compared against the *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* or *Salmonella typhimurium* genomic sequences to align the clone to the correct position on the chromosome. The NCBI BLASTN v 2.0.9 program was used for this comparison, and the incomplete *Staphylococcus aureus* genomic sequences licensed from TIGR, as well as the NCBI nonredundant GenBank database were used as the source of genomic data. *Salmonella typhimurium* sequences were compared to sequences available from the Genome Sequencing Center (<http://genome.wustl.edu/gsc/salmonella.shtml>), and the Sanger Centre (http://www.sanger.ac.uk/projects/S_typhi). *Pseudomonas aeruginosa* sequences were compared to a proprietary database and the NCBI GenBank database. The *E. faecalis* sequences were compared to a proprietary database.

The BLASTN analysis was performed using the default parameters except that the filtering was turned off. No further analysis was performed on inserts which resulted from the ligation of multiple fragments.

In general, antisense molecules and their complementary genes are identified as follows. First, all possible full length open reading frames (ORFs) are extracted from available genomic databases. Such databases include the GenBank nonredundant (nr) database, the unfinished genome database available from TIGR and the PathoSeq database developed by Incyte Genomics. The latter database comprises over 40 annotated bacterial genomes including complete ORF analysis. If databases are incomplete with regard to the bacterial genome of interest, it is not necessary to extract all ORFs in the genome but only to extract the ORFs within the portions of the available genomic sequences which are complementary to the clones of interest. Computer algorithms for identifying ORFs, such as GeneMark, are available and well known to those in the art. Comparison of the clone DNA to the complementary ORF(s) allows determination of whether the clone is a sense or antisense clone. Furthermore, each ORF extracted from the database can be compared to sequences in well annotated databases including the GenBank (nr) protein database, SWISSPROT and the like. A description of the gene or of a closely related gene in a closely related microorganism is often available in these databases. Similar methods are used to identify antisense clones corresponding to genes encoding non-translated RNAs.

In order to generate the gene identification data compiled in Table IB, each of the cloned nucleic acid sequences discussed above corresponding to SEQ ID NO.s 1-6213 was used to identify the corresponding *Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa* or *Salmonella typhimurium* ORFs in the PathoSeq v.4.1 (March 2000 release) database of microbial genomic sequences. For this purpose, the NCBI BLASTN 2.0.9 computer algorithm was used. The default parameters were used except that filtering was turned off. The default parameters for the BLASTN and BLASTX analyses were:

Expectation value (e)=10
 Alignment view options: pairwise
 10 Filter query sequence (DUST with BLASTN, SEG with others)=T
 Cost to open a gap (zero invokes behavior)=0
 Cost to extend a gap (zero invokes behavior)=0
 X dropoff value for gapped alignment (in bits) (zero invokes behavior)=0
 Show GI's in defines=F
 15 Penalty for a nucleotide mismatch (BLASTN only)=!3
 Reward for a nucleotide match (BLASTN only)=1
 Number of one-line descriptions (V)=500
 Number of alignments to show (B)=250
 Threshold for extending hits=default
 20 Perform gapped alignment (not available with BLASTX)=T
 Query Genetic code to use=1
 DB Genetic code (for TBLAST[nx] only)=1
 Number of processors to use=1
 SeqAlign file
 25 Believe the query define=F
 Matrix=BLOSUM62
 Word Size= default
 Effective length of the database (use zero for the real size)=0
 Number of best hits from a region to keep=100
 30 Length of region used to judge hits=20
 Effective length of the search space (use zero for the real size)=0
 Query strands to search against database (for BLAST[nx] and TBLASTX), 3 is both, 1 is top, 2 is bottom=3
 Produce HTML output=F
 35

Alternatively, ORFs were identified and refined by conducting a survey of the public and private data sources. Full-length gene protein and nucleotide sequences for these organisms were assembled from various sources. For *Pseudomonas aeruginosa*, gene sequences were adopted from the *Pseudomonas* genome sequencing project (downloaded from <http://www.pseudomonas.com>).
 40 For *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Streptococcus pneumoniae* and *Salmonella typhi*, genomic sequences from PathoSeq v 4.1 (Mar 2000 release) was reanalyzed for ORFs using the gene finding software GeneMark v 2.4a, which was purchased from GenePro Inc. 451 Bishop St., N.W., Suite B, Atlanta, GA, 30318, USA.

Antisense clones were identified as those clones for which transcription from the inducible
 45 promoter would result in the expression of an RNA antisense to a complementary ORF, intergenic

or intragenic sequence. Those clones containing single inserts and that caused growth sensitivity upon induction are listed in Table IA.

5 The gene descriptions in the PathoSeq database derive from annotations available in the public sequence databases described above. Where a clone was found to share significant sequence identity to two or more adjacent ORFs, it was listed once for each ORF and the PathoSeq information for each ORF was compiled in Table IB.

10 Table IA lists the SEQ ID NOs. and clone names of the inserts which inhibited proliferation. This information was used to identify the ORFs (SEQ ID NOs.: 6214-42397) whose gene products (SEQ ID NOs. 42398-78581) were inhibited by the nucleic acids comprising the nucleotide sequences of SEQ ID NOs. 1-6213. Table IB lists the clone name and the PathoSeq Locus containing the clone.

TABLE IB

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000001B01	EFA205257	E1M10000233C05	ECO103161	S1M10000005E05	SAU802496
E3M10000001B01	EFA205258	E1M10000233H05	ECO103224	S1M10000005C06	SAU802121
E3M10000001A02	EFA205257	E1M10000233H05	ECO103225	S1M10000005D06	SAU801183
E3M10000001A02	EFA205258	E1M10000233D08	ECO103185	S1M10000005D06	SAU801184
E3M10000001B02	EFA205225	E1M10000233F08	ECO103265	S1M10000005A07	SAU800967
E3M10000001B02	EFA201977	E1M10000233F08	ECO103266	S1M10000005B07	SAU802496
E3M10000001B02	EFA203137	E1M10000233A09	ECO104092	S1M10000005D07	SAU801264
E3M10000001C02	EFA200840	E1M10000233A09	ECO104093	S1M10000005A08	SAU802496
E3M10000001D02	EFA202003	E1M10000233E09	ECO103238	S1M10000005B08	SAU800548
E3M10000001E02	EFA200840	E1M10000233E09	ECO103239	S1M10000005D08	SAU800607
E3M10000001F02	EFA200807	E1M10000233F09	ECO103886	S1M10000005E08	SAU802496
E3M10000001G02	EFA205257	E1M10000233D10	ECO103242	S1M10000005B09	SAU800122
E3M10000001G02	EFA205258	E1M10000233D10	ECO103243	S1M10000005C09	SAU801481
E3M10000001H02	EFA200811	E1M10000233H10	ECO100094	S1M10000005D09	SAU800542
E3M10000001E03	EFA201987	E1M10000234E01	ECO103884	S1M10000005A10	SAU801723
E3M10000001E03	EFA205258	E1M10000234B02	ECO103886	S1M10000005A10	SAU801722
E3M10000001G03	EFA201987	E1M10000234G02	ECO103233	S1M10000005A11	SAU801644
E3M10000001G03	EFA205258	E1M10000234G02	ECO103234	S1M10000005C11	SAU801113
E3M10000001H03	EFA201987	E1M10000234C05	ECO103181	S1M10000005D11	SAU800547
E3M10000001H03	EFA205258	E1M10000234C07	ECO103844	S1M10000005E11	SAU800155
E3M10000001D04	EFA201980	E1M10000234C08	ECO103878	S1M10000005B12	SAU802160
E3M10000001D04	EFA201981	E1M10000234C08	ECO204942	S1M10000005B12	SAU603460
E3M10000001D04	EFA205229	E1M10000234F08	ECO103461	S1M10000005D12	SAU801644
E3M10000001E04	EFA201028	E1M10000234H08	ECO103226	S1M10000006F01	SAU801264
E3M10000001F04	EFA200811	E1M10000234F09	ECO103055	S1M10000006B02	SAU800381
E3M10000001G04	EFA201993	E1M10000234D10	ECO100876	S1M10000006E02	SAU802496
E3M10000001H04	EFA201980	E1M10000234G10	ECO100886	S1M10000006F02	SAU802160
E3M10000001H04	EFA201981	E1M10000234B12	ECO104010	S1M10000006G02	SAU802125
E3M10000001H04	EFA205229	E1M10000235D01	ECO102233	S1M10000006A03	SAU802496
E3M10000001B05	EFA201993	E1M10000235A03	ECO100798	S1M10000006B03	SAU802655
E3M10000001D05	EFA201974	E1M10000235H03	ECO103886	S1M10000006D03	SAU801740
E3M10000001D05	EFA201975	E1M10000235E04	ECO103236	S1M10000006E03	SAU801256
E3M10000001G05	EFA202001	E1M10000235B06	ECO103886	S1M10000006F03	SAU801434
E3M10000001G05	EFA202003	E1M10000235F06	ECO103481	S1M10000006G03	SAU801275
E3M10000001A06	EFA201028	E1M10000235B08	ECO103885	S1M10000006A04	SAU801139
E3M10000001F06	EFA201028	E1M10000235E08	ECO103161	S1M10000006B04	SAU802496
E3M10000001B08	EFA201028	E1M10000235B09	ECO101848	S1M10000006C04	SAU802158
E3M10000001E08	EFA200807	E1M10000235H09	ECO103481	S1M10000006E04	SAU801089
E3M10000001C09	EFA200839	E1M10000235H09	ECO103482	S1M10000006F04	SAU801644
E3M10000001D09	EFA201987	E1M10000235B10	ECO100886	S1M10000006G04	SAU801740
E3M10000001D09	EFA205258	E1M10000235A11	ECO102299	S1M10000006A05	SAU802224
E3M10000001E09	EFA201987	E1M10000235F12	ECO103233	S1M10000006A05	SAU802223
E3M10000001E09	EFA205258	E1M10000235F12	ECO103234	S1M10000006D05	SAU802496
E3M10000001B10	EFA205257	E1M10000236E01	ECO100095	S1M10000006G05	SAU801256
E3M10000001B10	EFA205258	E1M10000236A02	ECO102340	S1M10000006C06	SAU800331
E3M10000004D01	EFA201985	E1M10000236E02	ECO103878	S1M10000006C06	SAU800332
E3M10000004D01	EFA201984	E1M10000236E02	ECO204942	S1M10000006D06	SAU802496
E3M10000004D01	EFA202953	E1M10000236A03	ECO103287	S1M10000006F06	SAU800548
E3M10000004G01	EFA200839	E1M10000236D03	ECO102556	S1M10000006G06	SAU800006
E3M10000004D02	EFA202022	E1M10000236G03	ECO102655	S1M10000006A07	SAU800967
E3M10000004D02	EFA202028	E1M10000236A04	ECO103186	S1M10000006B07	SAU801760

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000004D02	EFA202536	E1M10000236D04	ECO103481	S1M10000006C07	SAU800546
E3M10000004C03	EFA200412	E1M10000236G04	ECO103510	S1M10000006D07	SAU801105
E3M10000004A04	EFA201981	E1M10000236A05	ECO102847	S1M10000006E07	SAU802496
E3M10000004A04	EFA205229	E1M10000236F05	ECO103181	S1M10000006G07	SAU801731
E3M10000004F08	EFA201977	E1M10000236F05	ECO103182	S1M10000006A08	SAU802496
E3M10000004F08	EFA203137	E1M10000236H06	ECO103242	S1M10000006E08	SAU802238
E3M10000004D10	EFA201999	E1M10000236H06	ECO103243	S1M10000006A10	SAU802496
E3M10000004D10	EFA201997	E1M10000236D08	ECO103669	S1M10000006B10	SAU802240
E3M10000004F10	EFA200624	E1M10000236F09	ECO103228	S1M10000006C10	SAU802496
E3M10000004E11	EFA200624	E1M10000236C10	ECO102227	S1M10000006G10	SAU802247
E3M10000004H11	EFA205225	E1M10000236A11	ECO102986	S1M10000006G10	SAU802248
E3M10000004H11	EFA201977	E1M10000236C11	ECO101088	S1M10000006B11	SAU801618
E3M10000004H11	EFA203137	E1M10000236F12	ECO101355	S1M10000006G11	SAU802119
E3M10000005B01	EFA201984	E1M10000237A02	ECO103161	S1M10000006G11	SAU802118
E3M10000005B01	EFA201983	E1M10000237B02	ECO101830	S1M10000006A12	SAU800548
E3M10000005C01	EFA200839	E1M10000237E04	ECO103217	S1M10000006B12	SAU802558
E3M10000005E01	EFA201977	E1M10000237E04	ECO103218	S1M10000007F01	SAU801256
E3M10000005E01	EFA203137	E1M10000237H04	ECO103624	S1M10000007B02	SAU800591
E3M10000005E02	EFA201977	E1M10000237H04	ECO103625	S1M10000007B02	SAU800592
E3M10000005E02	EFA203137	E1M10000237G06	ECO103232	S1M10000007F02	SAU801366
E3M10000005C03	EFA200811	E1M10000237G06	ECO103233	S1M10000007G02	SAU801138
E3M10000005C03	EFA200812	E1M10000237C07	ECO103886	S1M10000007A03	SAU801899
E3M10000005D03	EFA200811	E1M10000237G07	ECO103263	S1M10000007D03	SAU802496
E3M10000005D03	EFA200812	E1M10000237H07	ECO102267	S1M10000007G03	SAU800967
E3M10000005E03	EFA200811	E1M10000237A08	ECO103217	S1M10000007C04	SAU801740
E3M10000005E03	EFA200812	E1M10000237A08	ECO103216	S1M10000007E04	SAU802496
E3M10000005C04	EFA200660	E1M10000237B08	ECO101185	S1M10000007F04	SAU800478
E3M10000005C04	EFA200661	E1M10000237B08	ECO101186	S1M10000007C05	SAU800547
E3M10000005D04	EFA200839	E1M10000237D08	ECO103217	S1M10000007G05	SAU800548
E3M10000005H04	EFA200839	E1M10000237D08	ECO103216	S1M10000007C06	SAU801900
E3M10000005G05	EFA201977	E1M10000237E08	ECO103262	S1M10000007D06	SAU800547
E3M10000005G05	EFA203137	E1M10000237E08	ECO103878	S1M10000007E06	SAU801113
E3M10000005A07	EFA200811	E1M10000237E08	ECO204942	S1M10000007C07	SAU801904
E3M10000005A07	EFA200812	E1M10000237B09	ECO101844	S1M10000007E07	SAU801618
E3M10000005F07	EFA200839	E1M10000237D10	ECO102060	S1M10000007G07	SAU802638
E3M10000005B08	EFA201977	E1M10000237D10	ECO102061	S1M10000007C08	SAU800482
E3M10000005B08	EFA203137	E1M10000237E11	ECO100169	S1M10000007E08	SAU800700
E3M10000005E08	EFA202276	E1M10000238G01	ECO103451	S1M10000007F08	SAU802261
E3M10000005D10	EFA201977	E1M10000238A02	ECO103514	S1M10000007F09	SAU800210
E3M10000005D10	EFA203137	E1M10000238F03	ECO101939	S1M10000007D10	SAU800537
E3M10000005F10	EFA201977	E1M10000238B04	ECO103262	S1M10000007F10	SAU802240
E3M10000005F10	EFA203137	E1M10000238B04	ECO103878	S1M10000007B11	SAU802177
E3M10000006C01	EFA201982	E1M10000238B04	ECO204942	S1M10000007B11	SAU802176
E3M10000006C01	EFA201981	E1M10000238D04	ECO104147	S1M10000007D11	SAU801900
E3M10000006G02	EFA202214	E1M10000238F04	ECO103224	S1M10000008F01	SAU802160
E3M10000006G02	EFA202216	E1M10000238F04	ECO103225	S1M10000008F01	SAU603460
E3M10000006B03	EFA201999	E1M10000238E05	ECO103263	S1M10000008F02	SAU800519
E3M10000006B03	EFA201997	E1M10000238F05	ECO100194	S1M10000008G02	SAU802643
E3M10000006D03	EFA201982	E1M10000238F05	ECO100195	S1M10000008A03	SAU802177
E3M10000006D03	EFA201981	E1M10000238D06	ECO101185	S1M10000008A03	SAU802176
E3M10000006F04	EFA200811	E1M10000238D06	ECO101186	S1M10000008B03	SAU800023
E3M10000006F04	EFA200812	E1M10000238F06	ECO103229	S1M10000008F03	SAU800753
E3M10000006G04	EFA201999	E1M10000238F06	ECO103230	S1M10000008G03	SAU802369

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000006G04	EFA201997	E1M10000238A07	ECO103236	S1M10000008A04	SAU800478
E3M10000006H09	EFA201028	E1M10000238A07	ECO103237	S1M10000008B04	SAU802496
E3M10000006E11	EFA200811	E1M10000238A08	ECO101628	S1M10000008D05	SAU800517
E3M10000006E11	EFA200812	E1M10000238E08	ECO103237	S1M10000008D05	SAU202623
E3M10000006C12	EFA205225	E1M10000238E08	ECO103238	S1M10000008E05	SAU801183
E3M10000006C12	EFA201977	E1M10000238B09	ECO102213	S1M10000008G05	SAU800305
E3M10000006C12	EFA203137	E1M10000238G09	ECO103242	S1M10000008B06	SAU802225
E3M10000006G12	EFA201999	E1M10000238H09	ECO101324	S1M10000008F06	SAU800381
E3M10000006G12	EFA201997	E1M10000238F12	ECO100179	S1M10000008A08	SAU800195
E3M10000007F01	EFA201999	E1M10000238F12	ECO100180	S1M10000008B08	SAU801900
E3M10000007F01	EFA201997	E1M10000239B01	ECO104091	S1M10000008C08	SAU800006
E3M10000007G01	EFA201999	E1M10000239B01	ECO104092	S1M10000008E08	SAU800548
E3M10000007G01	EFA201997	E1M10000239D01	ECO102636	S1M10000008F08	SAU801618
E3M10000007A02	EFA201999	E1M10000239D02	ECO103885	S1M10000008A09	SAU800381
E3M10000007A02	EFA201997	E1M10000239C03	ECO103222	S1M10000008B09	SAU801193
E3M10000007B02	EFA201999	E1M10000239C03	ECO103223	S1M10000008C09	SAU802238
E3M10000007B02	EFA201997	E1M10000239E04	ECO104090	S1M10000008E09	SAU801698
E3M10000007B03	EFA201999	E1M10000239F04	ECO104243	S1M10000008F09	SAU802496
E3M10000007B03	EFA201997	E1M10000239F04	ECO104242	S1M10000008B10	SAU801740
E3M10000007C03	EFA201982	E1M10000239C05	ECO102827	S1M10000008E10	SAU801621
E3M10000007C03	EFA201981	E1M10000239C05	ECO102828	S1M10000008F10	SAU800537
E3M10000007D03	EFA201999	E1M10000239H05	ECO103697	S1M10000008F11	SAU802502
E3M10000007D03	EFA201997	E1M10000239H07	ECO101139	S1M10000008A12	SAU801740
E3M10000007H03	EFA202214	E1M10000239A08	ECO103886	S1M10000009B01	SAU802397
E3M10000007H03	EFA202216	E1M10000239D08	ECO103886	S1M10000009C01	SAU801516
E3M10000007C04	EFA201028	E1M10000239F08	ECO104187	S1M10000009C01	SAU801515
E3M10000007E05	EFA201980	E1M10000239H08	ECO103885	S1M10000009D01	SAU802189
E3M10000007E05	EFA201981	E1M10000239H10	ECO103226	S1M10000009F01	SAU802507
E3M10000007E05	EFA205229	E1M10000239H10	ECO103227	S1M10000009H01	SAU802397
E3M10000007F06	EFA201999	E1M10000239G11	ECO103886	S1M10000009A02	SAU801286
E3M10000007F06	EFA201997	E1M10000239G12	ECO102425	S1M10000009B02	SAU801286
E3M10000008E02	EFA200360	E1M10000240B03	ECO103239	S1M10000009C02	SAU800118
E3M10000008H02	EFA200766	E1M10000240B03	ECO103240	S1M10000009D02	SAU801362
E3M10000008C03	EFA200805	E1M10000240D03	ECO103228	S1M10000009E02	SAU801516
E3M10000008G05	EFA201999	E1M10000240D03	ECO103229	S1M10000009E02	SAU801515
E3M10000008G05	EFA201997	E1M10000240A04	ECO100198	S1M10000009F02	SAU802139
E3M10000008C08	EFA201637	E1M10000240D06	ECO100179	S1M10000009G02	SAU801516
E3M10000008D08	EFA200805	E1M10000240D06	ECO100180	S1M10000009G02	SAU801515
E3M10000008C09	EFA201986	E1M10000240G07	ECO103242	S1M10000009H02	SAU802632
E3M10000008C09	EFA205255	E1M10000240C08	ECO101259	S1M10000009B03	SAU802397
E3M10000008G09	EFA200839	E1M10000240C08	ECO101258	S1M10000009D03	SAU800118
E3M10000008G09	EFA200840	E1M10000240F08	ECO100095	S1M10000009F03	SAU800476
E3M10000009D01	EFA201986	E1M10000240B10	ECO101259	S1M10000009G03	SAU802502
E3M10000009D01	EFA205255	E1M10000240B10	ECO101258	S1M10000009H03	SAU800176
E3M10000009E02	EFA201986	E1M10000240B11	ECO103624	S1M10000009H03	SAU800177
E3M10000009E02	EFA205255	E1M10000240B11	ECO103625	S1M10000009A04	SAU801013
E3M10000009G02	EFA200805	E1M10000240H11	ECO103161	S1M10000009B04	SAU801193
E3M10000009E03	EFA202001	E1M10000240B12	ECO100886	S1M10000009D04	SAU801013
E3M10000009E05	EFA200805	E1M10000241F01	ECO103885	S1M10000009B05	SAU800542
E3M10000009H06	EFA200495	E1M10000241A02	ECO103263	S1M10000009C05	SAU800542
E3M10000009C07	EFA202216	E1M10000241H02	ECO103624	S1M10000009D05	SAU802511
E3M10000009C07	EFA104836	E1M10000241H02	ECO103625	S1M10000009F05	SAU800542
E3M10000009C09	EFA200807	E1M10000241A04	ECO103263	S1M10000009G05	SAU800542

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000010F01	EFA201976	E1M10000241C06	ECO101232	S1M10000009H05	SAU800230
E3M10000010F01	EFA201977	E1M10000241C06	ECO101233	S1M10000009B06	SAU801139
E3M10000010H02	EFA201976	E1M10000241F06	ECO103265	S1M10000009C06	SAU800259
E3M10000010D05	EFA201523	E1M10000241H07	ECO103263	S1M10000009E06	SAU801760
E3M10000010G07	EFA201993	E1M10000241A08	ECO103607	S1M10000009F06	SAU800542
E3M10000010C08	EFA200807	E1M10000241B08	ECO103263	S1M10000009G06	SAU801257
E3M10000010G09	EFA202012	E1M10000241E08	ECO100777	S1M10000009A07	SAU800153
E3M10000010G10	EFA202007	E1M10000241G08	ECO103265	S1M10000009B07	SAU800357
E3M10000011H02	EFA200811	E1M10000241A09	ECO101834	S1M10000009C07	SAU800306
E3M10000011B03	EFA202007	E1M10000241E09	ECO102593	S1M10000009D07	SAU801094
E3M10000011D03	EFA201987	E1M10000241H09	ECO103481	S1M10000009D07	SAU801095
E3M10000011D03	EFA205258	E1M10000241B11	ECO102588	S1M10000009F07	SAU800252
E3M10000011C07	EFA200307	E1M10000241E12	ECO102144	S1M10000009G07	SAU801511
E3M10000011A09	EFA200840	E1M10000242D06	ECO101089	S1M10000009H07	SAU802711
E3M10000011B09	EFA200805	E1M10000242F07	ECO103264	S1M10000009A08	SAU802100
E3M10000012B01	EFA201028	E1M10000242H07	ECO100663	S1M10000009A08	SAU802098
E3M10000012C01	EFA201028	E1M10000242F08	ECO102610	S1M10000009A08	SAU802099
E3M10000012B02	EFA201888	E1M10000242E11	ECO101932	S1M10000009C08	SAU802100
E3M10000012G02	EFA201993	E1M10000242H11	ECO103243	S1M10000009E08	SAU802539
E3M10000012F05	EFA201999	E1M10000242H11	ECO103244	S1M10000009E08	SAU202590
E3M10000012F06	EFA205257	E1M10000242E12	ECO101048	S1M10000009A09	SAU800006
E3M10000012B07	EFA201986	E1M10000243F03	ECO100245	S1M10000009C09	SAU801205
E3M10000012B07	EFA205255	E1M10000243G03	ECO102512	S1M10000009D09	SAU801507
E3M10000012B07	EFA201985	E1M10000243B04	ECO102277	S1M10000009D09	SAU801508
E3M10000012F07	EFA201981	E1M10000243B04	ECO102278	S1M10000009D09	SAU200470
E3M10000012F07	EFA205229	E1M10000243F04	ECO101684	S1M10000009E09	SAU801011
E3M10000012G07	EFA201986	E1M10000243F04	ECO101685	S1M10000009F09	SAU802496
E3M10000012G07	EFA205255	E1M10000243F06	ECO101714	S1M10000009G09	SAU801680
E3M10000012B08	EFA205257	E1M10000243F07	ECO100465	S1M10000009H09	SAU800543
E3M10000012D10	EFA200805	E1M10000243H07	ECO102922	S1M10000009A10	SAU802100
E3M10000012F10	EFA201986	E1M10000243F09	ECO101575	S1M10000009A10	SAU802099
E3M10000012F10	EFA205255	E1M10000243B10	ECO101152	S1M10000009B10	SAU802244
E3M10000013D02	EFA202001	E1M10000243B10	ECO101153	S1M10000009B10	SAU802243
E3M10000013E02	EFA201028	E1M10000243E11	ECO103488	S1M10000009C10	SAU802610
E3M10000013H03	EFA201985	E1M10000244F01	ECO100404	S1M10000009F10	SAU800189
E3M10000013C05	EFA202001	E1M10000244C02	ECO103233	S1M10000009G10	SAU800463
E3M10000013C05	EFA205285	E1M10000244C02	ECO103234	S1M10000009A11	SAU801011
E3M10000013F05	EFA200811	E1M10000244E02	ECO101475	S1M10000009B11	SAU802654
E3M10000013H05	EFA201997	E1M10000244E02	ECO101476	S1M10000009C11	SAU802606
E3M10000013A06	EFA202003	E1M10000244E02	ECO201962	S1M10000009D11	SAU802503
E3M10000013A07	EFA202001	E1M10000244H02	ECO103160	S1M10000009D11	SAU802502
E3M10000013D08	EFA201983	E1M10000244H02	ECO103161	S1M10000009E11	SAU802230
E3M10000013E08	EFA200805	E1M10000244B03	ECO101475	S1M10000009G11	SAU800942
E3M10000013D10	EFA201987	E1M10000244B03	ECO101476	S1M10000009H11	SAU802230
E3M10000013D10	EFA205258	E1M10000244B03	ECO201962	S1M10000009B12	SAU800001
E3M10000013G10	EFA200842	E1M10000244E03	ECO103160	S1M10000009E12	SAU801516
E3M10000014G09	EFA201204	E1M10000244E03	ECO103161	S1M10000009G12	SAU700396
E3M10000014B12	EFA205225	E1M10000244F03	ECO102669	S1M10000011B01	SAU802249
E3M10000014B12	EFA201977	E1M10000244A04	ECO102336	S1M10000011B01	SAU802248
E3M10000014B12	EFA203137	E1M10000244D04	ECO103218	S1M10000011C01	SAU802510
E3M10000014E12	EFA205257	E1M10000244E04	ECO101987	S1M10000011D01	SAU801677
E3M10000014E12	EFA201986	E1M10000244G07	ECO103697	S1M10000011F01	SAU801618
E3M10000015B04	EFA201611	E1M10000244D08	ECO100169	S1M10000011G01	SAU800490

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000015B12	EFA201999	E1M10000244E08	ECO100850	S1M10000011H01	SAU801741
E3M10000015E12	EFA201987	E1M10000244G08	ECO103885	S1M10000011A02	SAU800517
E3M10000015E12	EFA205258	E1M10000244B09	ECO103181	S1M10000011B02	SAU801179
E3M10000016A03	EFA201946	E1M10000244E10	ECO104266	S1M10000011D02	SAU800517
E3M10000016D03	EFA201512	E1M10000244E10	ECO305338	S1M10000011E02	SAU802275
E3M10000016A04	EFA205257	E1M10000244E11	ECO102588	S1M10000011E02	SAU802276
E3M10000016G05	EFA205288	E1M10000244F11	ECO100453	S1M10000011H02	SAU802713
E3M10000016G05	EFA203140	E1M10000244C12	ECO101372	S1M10000011A03	SAU801139
E3M10000016H05	EFA202001	E1M10000244E12	ECO103244	S1M10000011B03	SAU801580
E3M10000016F06	EFA200544	E1M10000244F12	ECO103223	S1M10000011C03	SAU802713
E3M10000016F10	EFA201986	E1M10000245C01	ECO101259	S1M10000011E03	SAU800453
E3M10000016F10	EFA205255	E1M10000245E02	ECO101067	S1M10000011F03	SAU800593
E3M10000016H10	EFA205257	E1M10000245E03	ECO101258	S1M10000011G03	SAU801487
E3M10000017A09	EFA205285	E1M10000245H03	ECO100169	S1M10000011G03	SAU801490
E3M10000017A09	EFA201999	E1M10000245A04	ECO101067	S1M10000011H03	SAU800539
E3M10000017D09	EFA201985	E1M10000245B04	ECO103074	S1M10000011A04	SAU802240
E3M10000018E01	EFA200839	E1M10000245B04	ECO103075	S1M10000011B04	SAU801514
E3M10000018C02	EFA201028	E1M10000245D04	ECO102815	S1M10000011B04	SAU801513
E3M10000018H06	EFA201981	E1M10000245B05	ECO103885	S1M10000011D04	SAU802162
E3M10000018A07	EFA202007	E1M10000245C05	ECO100179	S1M10000011E04	SAU801516
E3M10000018G09	EFA203904	E1M10000245C05	ECO100180	S1M10000011F04	SAU801252
E3M10000019D02	EFA202022	E1M10000245D05	ECO103514	S1M10000011G04	SAU801139
E3M10000019E03	EFA200807	E1M10000245F06	ECO103884	S1M10000011H04	SAU802448
E3M10000019E04	EFA200805	E1M10000245B07	ECO103878	S1M10000011B05	SAU802448
E3M10000019B06	EFA201888	E1M10000245B07	ECO204942	S1M10000011C05	SAU800539
E3M10000020G04	EFA200807	E1M10000245E09	ECO103262	S1M10000011G05	SAU800593
E3M10000020H05	EFA200840	E1M10000245E09	ECO103878	S1M10000011A06	SAU801514
E3M10000021C03	EFA200805	E1M10000245E09	ECO204942	S1M10000011A06	SAU801513
E3M10000021C04	EFA205285	E1M10000245G09	ECO103218	S1M10000011C06	SAU800593
E3M10000021D04	EFA200807	E1M10000245B11	ECO102040	S1M10000011D06	SAU800743
E3M10000021G04	EFA201974	E1M10000245C11	ECO103242	S1M10000011F06	SAU801230
E3M10000021A08	EFA201999	E1M10000245C11	ECO103243	S1M10000011F06	SAU801231
E3M10000021A08	EFA201997	E1M10000245D11	ECO101628	S1M10000011G06	SAU802710
E3M10000021C08	EFA202001	E1M10000245E11	ECO103221	S1M10000012B01	SAU801301
E3M10000021B10	EFA201997	E1M10000245E11	ECO103222	S1M10000012C01	SAU801900
E3M10000021E10	EFA202006	E1M10000245E11	ECO103223	S1M10000012E01	SAU801471
E3M10000021G10	EFA201028	E1M10000245H11	ECO103232	S1M10000012E01	SAU801470
E3M10000021A11	EFA201981	E1M10000245H11	ECO103233	S1M10000012G01	SAU801193
E3M10000021G11	EFA201997	E1M10000245B12	ECO103181	S1M10000012A02	SAU802565
E3M10000021H11	EFA201997	E1M10000245D12	ECO103227	S1M10000012A02	SAU802564
E3M10000022G02	EFA202298	E1M10000245D12	ECO103228	S1M10000012E02	SAU800329
E3M10000022A04	EFA201986	E1M10000245E12	ECO103116	S1M10000012G02	SAU800422
E3M10000022B04	EFA201986	E1M10000246F01	ECO103481	S1M10000012C03	SAU800276
E3M10000022D04	EFA201985	E1M10000246B02	ECO103886	S1M10000012F03	SAU802332
E3M10000022B05	EFA201986	E1M10000246D03	ECO100850	S1M10000012F03	SAU802333
E3M10000022B05	EFA205255	E1M10000246E03	ECO101184	S1M10000012G03	SAU300404
E3M10000022C05	EFA202001	E1M10000246G03	ECO103185	S1M10000012C04	SAU800276
E3M10000022C05	EFA205285	E1M10000246G03	ECO103186	S1M10000012D04	SAU800357
E3M10000022F05	EFA200805	E1M10000246C05	ECO102253	S1M10000012E04	SAU800345
E3M10000022C06	EFA201975	E1M10000246A06	ECO102091	S1M10000012F04	SAU802238
E3M10000022F06	EFA205285	E1M10000246B06	ECO101712	S1M10000012B05	SAU801515
E3M10000022F06	EFA201999	E1M10000246D06	ECO100672	S1M10000012C05	SAU801741
E3M10000022B07	EFA202012	E1M10000246C07	ECO103217	S1M10000012D05	SAU800424

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000022E08	EFA205288	E1M10000246F07	ECO104093	S1M10000012H05	SAU800546
E3M10000022F08	EFA201986	E1M10000246A08	ECO103372	S1M10000012H05	SAU800547
E3M10000022C09	EFA201999	E1M10000246D09	ECO103243	S1M10000012A06	SAU800546
E3M10000022A11	EFA201981	E1M10000246D09	ECO103244	S1M10000012A06	SAU800547
E3M10000022B11	EFA205288	E1M10000246E10	ECO103226	S1M10000012B06	SAU800593
E3M10000022B11	EFA202003	E1M10000246B11	ECO103263	S1M10000012C06	SAU801518
E3M10000022G12	EFA202006	E1M10000246F11	ECO101259	S1M10000012C06	SAU801517
E3M10000023B02	EFA202001	E1M10000247B01	ECO101656	S1M10000012D06	SAU801139
E3M10000023B02	EFA202003	E1M10000247E01	ECO101855	S1M10000012G06	SAU801517
E3M10000023D02	EFA200805	E1M10000247G01	ECO103219	S1M10000012B07	SAU802218
E3M10000023F02	EFA201985	E1M10000247E02	ECO103264	S1M10000012B07	SAU802217
E3M10000023G02	EFA202001	E1M10000247E02	ECO103265	S1M10000012D07	SAU800543
E3M10000023A03	EFA201984	E1M10000247A03	ECO102186	S1M10000012E07	SAU802419
E3M10000023A03	EFA202953	E1M10000247D03	ECO100757	S1M10000012F07	SAU802160
E3M10000023C03	EFA205257	E1M10000247G03	ECO103481	S1M10000012G07	SAU801516
E3M10000023C03	EFA201986	E1M10000247B04	ECO100560	S1M10000012G07	SAU801515
E3M10000023C04	EFA200811	E1M10000247H04	ECO100404	S1M10000012A08	SAU800452
E3M10000023D04	EFA202001	E1M10000247D05	ECO100557	S1M10000012A08	SAU800453
E3M10000023E04	EFA201985	E1M10000247A06	ECO103226	S1M10000012A08	SAU502176
E3M10000023G04	EFA201984	E1M10000247A06	ECO103227	S1M10000012B08	SAU800537
E3M10000023G04	EFA202953	E1M10000247B06	ECO103452	S1M10000012B08	SAU800536
E3M10000023A06	EFA201975	E1M10000247G06	ECO103885	S1M10000012D08	SAU801900
E3M10000023B06	EFA200811	E1M10000247G07	ECO103884	S1M10000012E08	SAU800173
E3M10000023B06	EFA200812	E1M10000247D08	ECO100885	S1M10000012F08	SAU800173
E3M10000023C06	EFA201984	E1M10000247F09	ECO101259	S1M10000012G08	SAU800244
E3M10000023C06	EFA202953	E1M10000247F09	ECO101258	S1M10000012H08	SAU802378
E3M10000023A07	EFA200807	E1M10000247C11	ECO104091	S1M10000012A09	SAU800588
E3M10000023E07	EFA205285	E1M10000247C11	ECO104092	S1M10000012D09	SAU800542
E3M10000023E07	EFA201999	E1M10000247E11	ECO103878	S1M10000012F09	SAU801758
E3M10000023C08	EFA201974	E1M10000247E11	ECO204942	S1M10000012H09	SAU800974
E3M10000023H08	EFA200807	E1M10000247B12	ECO103230	S1M10000012A10	SAU801904
E3M10000023A09	EFA202006	E1M10000248G01	ECO103462	S1M10000012F10	SAU800542
E3M10000023C09	EFA202001	E1M10000248A02	ECO101183	S1M10000012G10	SAU801354
E3M10000023C09	EFA202003	E1M10000248A02	ECO101184	S1M10000012H10	SAU800539
E3M10000023E09	EFA200805	E1M10000248E04	ECO103461	S1M10000012H10	SAU800540
E3M10000023F10	EFA201977	E1M10000248H04	ECO102255	S1M10000012H10	SAU800541
E3M10000023G10	EFA205255	E1M10000248H05	ECO101381	S1M10000012A11	SAU802419
E3M10000024A03	EFA205285	E1M10000248A06	ECO100068	S1M10000012B11	SAU802547
E3M10000024A04	EFA200326	E1M10000248A06	ECO100069	S1M10000012C11	SAU802249
E3M10000024C06	EFA200805	E1M10000248G06	ECO103886	S1M10000012C11	SAU802248
E3M10000024A08	EFA202001	E1M10000248H08	ECO103229	S1M10000012F11	SAU801093
E3M10000024A08	EFA205285	E1M10000248H08	ECO103230	S1M10000012H11	SAU800191
E3M10000024B08	EFA205288	E1M10000248B12	ECO100668	S1M10000012C12	SAU801093
E3M10000024B08	EFA203140	E1M10000248B12	ECO100669	S1M10000012D12	SAU800265
E3M10000025B01	EFA201976	E1M10000249E01	ECO103929	S1M10000012D12	SAU800266
E3M10000025B01	EFA201975	E1M10000249G01	ECO103074	S1M10000012E12	SAU802496
E3M10000025C01	EFA200807	E1M10000249G01	ECO103075	S1M10000012F12	SAU802496
E3M10000025D01	EFA202001	E1M10000249D02	ECO100850	S1M10000013E01	SAU802059
E3M10000025D01	EFA205285	E1M10000249F02	ECO100239	S1M10000013G01	SAU801475
E3M10000025B03	EFA205255	E1M10000249F03	ECO100362	S1M10000013A02	SAU802059
E3M10000025B03	EFA201985	E1M10000249H04	ECO102327	S1M10000013B02	SAU800540
E3M10000025C04	EFA202003	E1M10000249G05	ECO102637	S1M10000013E02	SAU800720
E3M10000025F04	EFA202001	E1M10000249C06	ECO103237	S1M10000013F02	SAU801518

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000025F04	EFA205285	E1M10000249D06	ECO103222	S1M10000013A03	SAU802254
E3M10000025B05	EFA201976	E1M10000249D06	ECO103223	S1M10000013B03	SAU801018
E3M10000025B05	EFA201975	E1M10000249A07	ECO103376	S1M10000013C03	SAU801093
E3M10000025C05	EFA201977	E1M10000249C07	ECO103886	S1M10000013F03	SAU800548
E3M10000025C05	EFA203137	E1M10000249B08	ECO102553	S1M10000013H03	SAU600582
E3M10000025A06	EFA202001	E1M10000249F08	ECO103482	S1M10000013H03	SAU103752
E3M10000025F06	EFA201986	E1M10000249B09	ECO103494	S1M10000013B04	SAU800543
E3M10000025F06	EFA205255	E1M10000249C09	ECO101684	S1M10000013E04	SAU802229
E3M10000025F06	EFA201985	E1M10000249H09	ECO103263	S1M10000013G04	SAU800391
E3M10000025C07	EFA201028	E1M10000249E10	ECO103881	S1M10000013H04	SAU800017
E3M10000025E07	EFA201993	E1M10000249E10	ECO103882	S1M10000013A05	SAU800017
E3M10000025G07	EFA202003	E1M10000249D11	ECO102144	S1M10000013B05	SAU800537
E3M10000025C08	EFA200807	E1M10000249H11	ECO101382	S1M10000013C05	SAU800965
E3M10000025E08	EFA201974	E1M10000250F02	ECO103263	S1M10000013G05	SAU800771
E3M10000025F08	EFA200840	E1M10000250H02	ECO103331	S1M10000013G05	SAU800772
E3M10000025C09	EFA200805	E1M10000250E03	ECO102556	S1M10000013H05	SAU802506
E3M10000025F09	EFA202006	E1M10000250G03	ECO101314	S1M10000013B06	SAU801234
E3M10000025G09	EFA200662	E1M10000250A04	ECO103262	S1M10000013E06	SAU802125
E3M10000025G09	EFA200661	E1M10000250A04	ECO103878	S1M10000013G06	SAU800179
E3M10000025B10	EFA201999	E1M10000250A04	ECO204942	S1M10000013A07	SAU802247
E3M10000025D10	EFA200805	E1M10000250E04	ECO103884	S1M10000013B07	SAU802496
E3M10000025F10	EFA205285	E1M10000250H04	ECO103710	S1M10000013C07	SAU800537
E3M10000025C11	EFA201999	E1M10000250A05	ECO101095	S1M10000013F07	SAU801183
E3M10000025E11	EFA201985	E1M10000250E05	ECO101328	S1M10000013G07	SAU801515
E3M10000025E11	EFA201984	E1M10000250E05	ECO101329	S1M10000013H07	SAU800517
E3M10000025E11	EFA202953	E1M10000250G07	ECO101567	S1M10000013A08	SAU801864
E3M10000025F11	EFA201974	E1M10000250G07	ECO101568	S1M10000013C08	SAU801517
E3M10000025E12	EFA200660	E1M10000250D09	ECO103264	S1M10000013D08	SAU802234
E3M10000025F12	EFA201997	E1M10000250G09	ECO101180	S1M10000013D08	SAU802233
E3M10000027G01	EFA200660	E1M10000250B10	ECO103263	S1M10000013E08	SAU802063
E3M10000027G01	EFA200661	E1M10000250E10	ECO103217	S1M10000013F08	SAU801647
E3M10000027A02	EFA201982	E1M10000250D11	ECO103097	S1M10000013G08	SAU600582
E3M10000027A02	EFA201981	E1M10000250H11	ECO103376	S1M10000013A09	SAU800506
E3M10000027C02	EFA200842	E1M10000250G12	ECO103264	S1M10000013A09	SAU800505
E3M10000027C03	EFA202001	E1M10000251A02	ECO101256	S1M10000013B09	SAU801185
E3M10000027C03	EFA205285	E1M10000251D04	ECO103100	S1M10000013B09	SAU801186
E3M10000027D03	EFA200807	E1M10000251F04	ECO100662	S1M10000013C09	SAU801760
E3M10000027H03	EFA205288	E1M10000251H04	ECO103243	S1M10000013D09	SAU802054
E3M10000027H04	EFA202001	E1M10000251F05	ECO104213	S1M10000013D09	SAU802055
E3M10000027D05	EFA201999	E1M10000251A07	ECO101183	S1M10000013E09	SAU801518
E3M10000027A07	EFA202001	E1M10000251A07	ECO101184	S1M10000013E09	SAU801517
E3M10000027B07	EFA201997	E1M10000251C07	ECO103514	S1M10000013F09	SAU801273
E3M10000027H07	EFA205285	E1M10000251B08	ECO103220	S1M10000013H09	SAU802091
E3M10000027H07	EFA201999	E1M10000251B08	ECO103221	S1M10000013H09	SAU802092
E3M10000027B08	EFA202001	E1M10000251H08	ECO103231	S1M10000013A10	SAU801758
E3M10000027C08	EFA201993	E1M10000251H09	ECO101763	S1M10000013C10	SAU802094
E3M10000027D08	EFA202217	E1M10000251C10	ECO100170	S1M10000013E10	SAU802230
E3M10000027G08	EFA205257	E1M10000251F11	ECO103883	S1M10000013F10	SAU800292
E3M10000027G08	EFA205258	E1M10000251G11	ECO103263	S1M10000013F10	SAU800293
E3M10000027A09	EFA201984	E1M10000251C12	ECO101184	S1M10000013G10	SAU802539
E3M10000027A09	EFA202953	E1M10000251D12	ECO100886	S1M10000013H10	SAU801760
E3M10000027B09	EFA200807	E1M10000251F12	ECO103223	S1M10000013A11	SAU801515
E3M10000027D10	EFA202006	E1M10000252D01	ECO102023	S1M10000013B11	SAU302699

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000028B01	EFA200839	E1M10000252G02	ECO104212	S1M10000013B11	SAU302746
E3M10000028C01	EFA200811	E1M10000252C03	ECO103229	S1M10000013C11	SAU801760
E3M10000028C01	EFA200812	E1M10000252C03	ECO103230	S1M10000013D11	SAU800001
E3M10000028D01	EFA201976	E1M10000252G03	ECO103029	S1M10000013G11	SAU801791
E3M10000028D01	EFA201975	E1M10000252B04	ECO100169	S1M10000013F12	SAU800005
E3M10000028E01	EFA201869	E1M10000252E04	ECO103242	S1M10000013G12	SAU801280
E3M10000028A02	EFA205229	E1M10000252F04	ECO100663	S1M10000014B01	SAU802249
E3M10000028B02	EFA200811	E1M10000252A05	ECO102646	S1M10000014E01	SAU802238
E3M10000028B02	EFA200812	E1M10000252A06	ECO103181	S1M10000014E01	SAU802237
E3M10000028C02	EFA200811	E1M10000252D06	ECO103481	S1M10000014A02	SAU802425
E3M10000028C02	EFA200812	E1M10000252A07	ECO103221	S1M10000014B02	SAU800539
E3M10000028D02	EFA202298	E1M10000252H07	ECO103223	S1M10000014B02	SAU800540
E3M10000028F02	EFA205285	E1M10000252A09	ECO103886	S1M10000014F02	SAU801626
E3M10000028A03	EFA201977	E1M10000252E09	ECO102227	S1M10000014F02	SAU801625
E3M10000028B03	EFA202001	E1M10000252B10	ECO103775	S1M10000014F02	SAU801624
E3M10000028E03	EFA203598	E1M10000252D10	ECO100457	S1M10000014G02	SAU800354
E3M10000028F03	EFA201980	E1M10000252D10	ECO100458	S1M10000014H02	SAU801246
E3M10000028F03	EFA201981	E1M10000252E10	ECO102192	S1M10000014A03	SAU801606
E3M10000028F03	EFA205229	E1M10000252E11	ECO103262	S1M10000014B03	SAU800517
E3M10000028A04	EFA201986	E1M10000252E11	ECO103878	S1M10000014D03	SAU802121
E3M10000028A04	EFA205255	E1M10000252E11	ECO204942	S1M10000014F03	SAU802586
E3M10000028B04	EFA202001	E1M10000252E12	ECO100748	S1M10000014F03	SAU802585
E3M10000028B04	EFA205285	E1M10000253A02	ECO100886	S1M10000014H03	SAU802187
E3M10000028C04	EFA200894	E1M10000253G02	ECO103263	S1M10000014B04	SAU800924
E3M10000028E04	EFA200613	E1M10000253C04	ECO103885	S1M10000014B04	SAU800925
E3M10000028H04	EFA205257	E1M10000253D04	ECO103221	S1M10000014E04	SAU801644
E3M10000028A05	EFA202166	E1M10000253F04	ECO100169	S1M10000014F04	SAU800016
E3M10000028A05	EFA202168	E1M10000253H05	ECO103240	S1M10000014G04	SAU801719
E3M10000028B05	EFA201087	E1M10000253H05	ECO103241	S1M10000014H04	SAU801256
E3M10000028B05	EFA201084	E1M10000253D08	ECO103886	S1M10000014A05	SAU800532
E3M10000028C05	EFA202001	E1M10000253E08	ECO103242	S1M10000014B05	SAU800319
E3M10000028D05	EFA202168	E1M10000253A09	ECO103263	S1M10000014C05	SAU802247
E3M10000028F05	EFA202006	E1M10000253D09	ECO102636	S1M10000014E05	SAU800503
E3M10000028G05	EFA202006	E1M10000253E09	ECO103929	S1M10000014F05	SAU802506
E3M10000028A06	EFA201883	E1M10000253F09	ECO101259	S1M10000014H05	SAU801192
E3M10000028B06	EFA200840	E1M10000253G09	ECO102637	S1M10000014B06	SAU800701
E3M10000028C06	EFA201888	E1M10000253A10	ECO100632	S1M10000014C06	SAU802081
E3M10000028D06	EFA200839	E1M10000253C10	ECO103218	S1M10000014D06	SAU802081
E3M10000028G06	EFA201905	E1M10000253D10	ECO103185	S1M10000014G06	SAU801256
E3M10000028B07	EFA202001	E1M10000253B11	ECO103262	S1M10000014H06	SAU801256
E3M10000028C07	EFA202298	E1M10000253B11	ECO103878	S1M10000014A07	SAU801220
E3M10000028E07	EFA200811	E1M10000253B11	ECO204942	S1M10000014B07	SAU800545
E3M10000028F07	EFA201028	E1M10000253F11	ECO103161	S1M10000014C07	SAU802230
E3M10000028G07	EFA201986	E1M10000253D12	ECO102556	S1M10000014E07	SAU802100
E3M10000028G07	EFA205255	E1M10000253G12	ECO101086	S1M10000014E07	SAU802098
E3M10000028H07	EFA200842	E1M10000254A03	ECO102637	S1M10000014E07	SAU802099
E3M10000028A08	EFA201087	E1M10000254A03	ECO102638	S1M10000014G07	SAU802581
E3M10000028A08	EFA201084	E1M10000254B03	ECO103242	S1M10000014G07	SAU802580
E3M10000028B08	EFA201981	E1M10000254C03	ECO103226	S1M10000014B08	SAU800542
E3M10000028C08	EFA200811	E1M10000254F03	ECO101066	S1M10000014D08	SAU800542
E3M10000028C08	EFA200812	E1M10000254A04	ECO103263	S1M10000014E08	SAU802496
E3M10000028D08	EFA202015	E1M10000254G05	ECO103074	S1M10000014F08	SAU800001
E3M10000029B01	EFA202214	E1M10000254G05	ECO103075	S1M10000014G08	SAU800546

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000029D01	EFA202168	E1M10000254H05	ECO103243	S1M10000014H08	SAU800546
E3M10000029E01	EFA202274	E1M10000254H05	ECO103244	S1M10000014C09	SAU802249
E3M10000029F01	EFA200916	E1M10000254B06	ECO102636	S1M10000014C09	SAU802248
E3M10000029G01	EFA200179	E1M10000254A07	ECO103885	S1M10000014D09	SAU801061
E3M10000029A02	EFA202001	E1M10000254E07	ECO103263	S1M10000014E09	SAU801760
E3M10000029A02	EFA205285	E1M10000254G07	ECO103886	S1M10000014F09	SAU801760
E3M10000029B02	EFA202001	E1M10000254A08	ECO103097	S1M10000014B10	SAU801186
E3M10000029C02	EFA200358	E1M10000254B09	ECO101134	S1M10000014C10	SAU801800
E3M10000029H02	EFA200747	E1M10000254F10	ECO100095	S1M10000014D10	SAU802154
E3M10000029H02	EFA200746	E1M10000254A11	ECO103227	S1M10000014E10	SAU800019
E3M10000029C03	EFA201379	E1M10000254C11	ECO103221	S1M10000014F10	SAU801354
E3M10000029D03	EFA202001	E1M10000254C11	ECO103222	S1M10000014A11	SAU801630
E3M10000029E03	EFA200807	E1M10000254E12	ECO102834	S1M10000014B11	SAU802565
E3M10000029A04	EFA201987	E1M10000255C01	ECO100886	S1M10000014B11	SAU802564
E3M10000029B04	EFA201163	E1M10000255G02	ECO103262	S1M10000014C11	SAU801682
E3M10000029C04	EFA202160	E1M10000255G02	ECO103878	S1M10000014C11	SAU801681
E3M10000029D04	EFA200457	E1M10000255G02	ECO204942	S1M10000014D11	SAU802654
E3M10000029G04	EFA200457	E1M10000255H02	ECO101324	S1M10000014H11	SAU802565
E3M10000029H04	EFA202177	E1M10000255A04	ECO103482	S1M10000014H11	SAU802564
E3M10000029H04	EFA202176	E1M10000255D05	ECO100886	S1M10000014A12	SAU800006
E3M10000029A05	EFA201028	E1M10000255F06	ECO102857	S1M10000014B12	SAU802565
E3M10000029B05	EFA200840	E1M10000255G06	ECO103262	S1M10000014B12	SAU802564
E3M10000029C05	EFA200562	E1M10000255G06	ECO103878	S1M10000014C12	SAU802218
E3M10000029D05	EFA201987	E1M10000255G06	ECO204942	S1M10000014C12	SAU802217
E3M10000029E05	EFA200192	E1M10000255B08	ECO103226	S1M10000014E12	SAU802160
E3M10000029F05	EFA202160	E1M10000255B08	ECO103227	S1M10000014G12	SAU802246
E3M10000029G05	EFA202180	E1M10000255D09	ECO103655	S1M10000014G12	SAU802247
E3M10000029H05	EFA202007	E1M10000255F09	ECO102827	S1M10000015C01	SAU800547
E3M10000029B06	EFA201749	E1M10000255F09	ECO102828	S1M10000015F01	SAU802548
E3M10000029C06	EFA201984	E1M10000255B10	ECO101026	S1M10000015G01	SAU800324
E3M10000029C06	EFA201983	E1M10000256F01	ECO103263	S1M10000015A02	SAU801631
E3M10000029D06	EFA201987	E1M10000256B02	ECO102645	S1M10000015B02	SAU802606
E3M10000029D06	EFA201993	E1M10000256B02	ECO102646	S1M10000015B02	SAU802605
E3M10000029F06	EFA203429	E1M10000256D02	ECO101684	S1M10000015C02	SAU802606
E3M10000029C07	EFA202177	E1M10000256A04	ECO104147	S1M10000015C02	SAU802605
E3M10000029C07	EFA202176	E1M10000256C05	ECO103559	S1M10000015D02	SAU802261
E3M10000029E07	EFA202378	E1M10000256E07	ECO103262	S1M10000015E02	SAU800187
E3M10000029G07	EFA201869	E1M10000256E07	ECO103878	S1M10000015F02	SAU800499
E3M10000029H07	EFA202013	E1M10000256E07	ECO204942	S1M10000015G02	SAU801007
E3M10000029B08	EFA202200	E1M10000256E09	ECO100184	S1M10000015G02	SAU801008
E3M10000029C08	EFA203606	E1M10000256E09	ECO100185	S1M10000015A03	SAU800185
E3M10000029C08	EFA203607	E1M10000256A10	ECO102415	S1M10000015C03	SAU800187
E3M10000029D08	EFA201926	E1M10000256F10	ECO103160	S1M10000015D03	SAU802331
E3M10000029E08	EFA202298	E1M10000256C12	ECO103230	S1M10000015E03	SAU801511
E3M10000029G08	EFA202012	E1M10000256C12	ECO103231	S1M10000015F03	SAU801758
E3M10000029H08	EFA201982	E1M10000257C01	ECO103820	S1M10000015G03	SAU801749
E3M10000029C09	EFA201869	E1M10000257G01	ECO103238	S1M10000015A04	SAU600582
E3M10000029E09	EFA200457	E1M10000257G01	ECO103239	S1M10000015D04	SAU800942
E3M10000029F09	EFA201460	E1M10000257G01	ECO103240	S1M10000015F04	SAU801758
E3M10000029G09	EFA200538	E1M10000257A02	ECO100135	S1M10000015G04	SAU801719
E3M10000029A10	EFA202007	E1M10000257D02	ECO102555	S1M10000015H04	SAU802230
E3M10000029C10	EFA200457	E1M10000257D02	ECO102556	S1M10000015H04	SAU802229
E3M10000029E10	EFA201869	E1M10000257H02	ECO103226	S1M10000015A05	SAU802217

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000029E10	EFA201867	E1M10000257H02	ECO103227	S1M10000015C05	SAU600582
E3M10000029F10	EFA202378	E1M10000257C03	ECO100161	S1M10000015D05	SAU802262
E3M10000029G10	EFA200245	E1M10000257F04	ECO101685	S1M10000015G05	SAU801515
E3M10000029G10	EFA200246	E1M10000257F04	ECO101686	S1M10000015A06	SAU801572
E3M10000029B11	EFA200478	E1M10000257G04	ECO103263	S1M10000015C06	SAU802217
E3M10000029G11	EFA200326	E1M10000257B05	ECO101500	S1M10000015D06	SAU802094
E3M10000029H11	EFA202003	E1M10000257D05	ECO102599	S1M10000015E06	SAU801237
E3M10000029B12	EFA201028	E1M10000257D05	ECO102600	S1M10000015F06	SAU802200
E3M10000029C12	EFA201869	E1M10000257F06	ECO103097	S1M10000015F06	SAU300588
E3M10000029D12	EFA201986	E1M10000257G07	ECO101333	S1M10000015F06	SAU502215
E3M10000029E12	EFA200478	E1M10000257H07	ECO103222	S1M10000015F06	SAU201383
E3M10000029F12	EFA201375	E1M10000257H07	ECO103223	S1M10000015F06	SAU802199
E3M10000029G12	EFA200421	E1M10000257H08	ECO103559	S1M10000015G06	SAU801253
E3M10000030E01	EFA201986	E1M10000257A09	ECO102637	S1M10000015H06	SAU802200
E3M10000030E01	EFA205255	E1M10000257D09	ECO100886	S1M10000015H06	SAU300588
E3M10000030F01	EFA200454	E1M10000257G10	ECO100485	S1M10000015H06	SAU502215
E3M10000030G01	EFA201977	E1M10000257H10	ECO101376	S1M10000015H06	SAU201383
E3M10000030D02	EFA202182	E1M10000257A11	ECO103881	S1M10000015H06	SAU802199
E3M10000030E02	EFA204646	E1M10000257A11	ECO103882	S1M10000015E07	SAU801183
E3M10000030B03	EFA202006	E1M10000257C11	ECO103220	S1M10000015F07	SAU800542
E3M10000030C03	EFA201888	E1M10000257F11	ECO102420	S1M10000015G07	SAU800547
E3M10000030G03	EFA200916	E1M10000257B12	ECO103479	S1M10000015B08	SAU802240
E3M10000030H03	EFA200240	E1M10000257F12	ECO103262	S1M10000015B08	SAU802239
E3M10000030B04	EFA200840	E1M10000257F12	ECO103878	S1M10000015C08	SAU801558
E3M10000030C04	EFA201993	E1M10000257F12	ECO204942	S1M10000015C08	SAU801557
E3M10000030E04	EFA200454	E1M10000258C01	ECO100094	S1M10000015F08	SAU802401
E3M10000030F04	EFA201999	E1M10000258C01	ECO100095	S1M10000015G08	SAU802218
E3M10000030H04	EFA201869	E1M10000258H02	ECO103226	S1M10000015G08	SAU203799
E3M10000030A05	EFA200805	E1M10000258H02	ECO103227	S1M10000015A09	SAU800517
E3M10000030B05	EFA200457	E1M10000258G03	ECO102556	S1M10000015B09	SAU801434
E3M10000030D05	EFA201984	E1M10000258A04	ECO103231	S1M10000015E09	SAU800001
E3M10000030E05	EFA205288	E1M10000258C04	ECO102091	S1M10000015F09	SAU802231
E3M10000030E05	EFA202003	E1M10000258G04	ECO103302	S1M10000015F09	SAU802230
E3M10000030B06	EFA201999	E1M10000258G04	ECO103303	S1M10000015G09	SAU800218
E3M10000030D06	EFA201884	E1M10000258C05	ECO101259	S1M10000015G09	SAU800219
E3M10000030F06	EFA201999	E1M10000258D05	ECO100169	S1M10000015B10	SAU802701
E3M10000030G06	EFA200192	E1M10000258F05	ECO101308	S1M10000015C10	SAU800517
E3M10000030H06	EFA205285	E1M10000258G05	ECO100886	S1M10000015E10	SAU801011
E3M10000030H06	EFA201999	E1M10000258A06	ECO103883	S1M10000015F10	SAU801011
E3M10000030B07	EFA201028	E1M10000258A06	ECO103884	S1M10000015G10	SAU800542
E3M10000030F07	EFA200457	E1M10000258D06	ECO102935	S1M10000015A11	SAU802240
E3M10000030H07	EFA201993	E1M10000258B07	ECO101524	S1M10000015C11	SAU801434
E3M10000030A08	EFA202180	E1M10000258G07	ECO101259	S1M10000015E11	SAU802159
E3M10000030B08	EFA200457	E1M10000258G07	ECO101258	S1M10000015E11	SAU802158
E3M10000030D08	EFA200677	E1M10000258G08	ECO103482	S1M10000015G11	SAU801256
E3M10000030E08	EFA200418	E1M10000258B09	ECO103229	S1M10000015A12	SAU800547
E3M10000030G08	EFA200805	E1M10000258B09	ECO103230	S1M10000015C12	SAU802081
E3M10000030H08	EFA200805	E1M10000258D09	ECO103832	S1M10000015D12	SAU802218
E3M10000030A09	EFA200805	E1M10000258F10	ECO103878	S1M10000015E12	SAU800591
E3M10000030D09	EFA200677	E1M10000258F10	ECO204942	S1M10000016C01	SAU801281
E3M10000030E09	EFA205288	E1M10000258C11	ECO102553	S1M10000016C01	SAU801282
E3M10000030G09	EFA201883	E1M10000258F11	ECO103228	S1M10000016D01	SAU800589
E3M10000030B10	EFA200454	E1M10000258F11	ECO103229	S1M10000016G01	SAU800002

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000030D10	EFA200457	E1M10000259C03	ECO102294	S1M10000016B02	SAU800016
E3M10000030E10	EFA200457	E1M10000259C03	ECO102295	S1M10000016C02	SAU800359
E3M10000030F10	EFA201981	E1M10000259B04	ECO103883	S1M10000016D02	SAU802439
E3M10000030H10	EFA202007	E1M10000259E04	ECO101944	S1M10000016F02	SAU801188
E3M10000030A11	EFA201926	E1M10000259E05	ECO102636	S1M10000016F02	SAU801189
E3M10000030B11	EFA201869	E1M10000259B12	ECO100811	S1M10000016A03	SAU802228
E3M10000030H11	EFA201920	E1M10000260E02	ECO202902	S1M10000016A03	SAU802227
E3M10000030B12	EFA202177	E1M10000260G02	ECO104090	S1M10000016F03	SAU801565
E3M10000030B12	EFA202176	E1M10000260F04	ECO101482	S1M10000016G03	SAU801617
E3M10000030C12	EFA202180	E1M10000260A05	ECO100647	S1M10000016G03	SAU801618
E3M10000030D12	EFA201981	E1M10000260A05	ECO100648	S1M10000016H03	SAU801517
E3M10000030F12	EFA202007	E1M10000260C05	ECO102454	S1M10000016A04	SAU800539
E3M10000030G12	EFA202217	E1M10000260E05	ECO103929	S1M10000016A04	SAU800540
E3M10000031C01	EFA201926	E1M10000260C07	ECO101393	S1M10000016C04	SAU802082
E3M10000031A02	EFA200326	E1M10000260G07	ECO103488	S1M10000016D04	SAU802082
E3M10000031B02	EFA200357	E1M10000260B08	ECO103302	S1M10000016E04	SAU800153
E3M10000031B02	EFA200359	E1M10000260D08	ECO103461	S1M10000016G04	SAU800017
E3M10000031F02	EFA201028	E1M10000260E08	ECO100179	S1M10000016H04	SAU801183
E3M10000031F02	EFA201041	E1M10000260E08	ECO100180	S1M10000016B05	SAU801237
E3M10000031B03	EFA201801	E1M10000260E09	ECO103559	S1M10000016C05	SAU801089
E3M10000031D03	EFA202160	E1M10000260E09	ECO103558	S1M10000016D05	SAU800509
E3M10000031E03	EFA200805	E1M10000260C10	ECO103264	S1M10000016E05	SAU801237
E3M10000031G03	EFA200454	E1M10000260D10	ECO101031	S1M10000016F05	SAU802642
E3M10000031B04	EFA200179	E1M10000260D10	ECO101032	S1M10000016F05	SAU802641
E3M10000031C04	EFA201984	E1M10000260E10	ECO104093	S1M10000016G05	SAU802154
E3M10000031D04	EFA200807	E1M10000260G10	ECO103230	S1M10000016A06	SAU800543
E3M10000031E04	EFA205288	E1M10000260G10	ECO103231	S1M10000016B06	SAU800539
E3M10000031E04	EFA202003	E1M10000260H10	ECO103181	S1M10000016B06	SAU800540
E3M10000031F04	EFA202001	E1M10000260H10	ECO103182	S1M10000016C06	SAU802496
E3M10000031F04	EFA202003	E1M10000260H11	ECO103237	S1M10000016D06	SAU800967
E3M10000031G04	EFA202012	E1M10000260B12	ECO103263	S1M10000016E06	SAU802649
E3M10000031G05	EFA200805	E1M10000260D12	ECO104206	S1M10000016F06	SAU800106
E3M10000031H05	EFA201869	E1M10000260G12	ECO102041	S1M10000016A07	SAU801413
E3M10000031A06	EFA202631	E1M10000261F01	ECO100465	S1M10000016B07	SAU800385
E3M10000031C06	EFA202006	E1M10000261B02	ECO103222	S1M10000016E07	SAU802652
E3M10000031G06	EFA200457	E1M10000261B02	ECO103223	S1M10000016E07	SAU802651
E3M10000031H06	EFA200418	E1M10000261H02	ECO103223	S1M10000016E07	SAU502208
E3M10000031A07	EFA200538	E1M10000261G04	ECO102857	S1M10000016B08	SAU800478
E3M10000031E07	EFA202003	E1M10000261H05	ECO103069	S1M10000016C08	SAU800478
E3M10000031F07	EFA200457	E1M10000261G06	ECO100361	S1M10000016D08	SAU801749
E3M10000031G07	EFA200840	E1M10000261G06	ECO100362	S1M10000016E08	SAU800543
E3M10000031H07	EFA200840	E1M10000261H06	ECO103886	S1M10000016F08	SAU800478
E3M10000031A08	EFA201028	E1M10000261D08	ECO103230	S1M10000016H08	SAU801751
E3M10000031D08	EFA202160	E1M10000261D08	ECO103231	S1M10000016A09	SAU801751
E3M10000031G08	EFA201886	E1M10000261F08	ECO100886	S1M10000016B09	SAU800490
E3M10000031H08	EFA201926	E1M10000261C09	ECO103886	S1M10000016C09	SAU800767
E3M10000031B09	EFA200674	E1M10000261H09	ECO103624	S1M10000016D09	SAU801263
E3M10000031E09	EFA201926	E1M10000261H09	ECO103625	S1M10000016E09	SAU802243
E3M10000031F09	EFA202110	E1M10000261E10	ECO103220	S1M10000016F09	SAU802243
E3M10000031B10	EFA201009	E1M10000261E10	ECO103221	S1M10000016A10	SAU801517
E3M10000031C10	EFA205255	E1M10000262E01	ECO101635	S1M10000016B10	SAU802254
E3M10000031H10	EFA200840	E1M10000262C02	ECO103696	S1M10000016C10	SAU802389
E3M10000031B11	EFA202013	E1M10000262E02	ECO103262	S1M10000016C10	SAU802390

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000031C11	EFA201878	E1M10000262E02	ECO103878	S1M10000016C10	SAU302890
E3M10000031F11	EFA201977	E1M10000262E02	ECO204942	S1M10000016D10	SAU802389
E3M10000031F11	EFA203137	E1M10000262F02	ECO102229	S1M10000016D10	SAU802390
E3M10000031G11	EFA201999	E1M10000262D03	ECO103230	S1M10000016D10	SAU302890
E3M10000031H11	EFA201028	E1M10000262D03	ECO103231	S1M10000016E10	SAU802528
E3M10000031H11	EFA201041	E1M10000262G04	ECO103223	S1M10000016H10	SAU800545
E3M10000031B12	EFA201028	E1M10000262C05	ECO101035	S1M10000016B11	SAU801719
E3M10000031C12	EFA201208	E1M10000262C05	ECO101036	S1M10000016C11	SAU801515
E3M10000032C01	EFA200842	E1M10000262A06	ECO101780	S1M10000016D11	SAU801515
E3M10000032D01	EFA202217	E1M10000262A07	ECO103221	S1M10000016E11	SAU802162
E3M10000032F01	EFA205285	E1M10000262E07	ECO103972	S1M10000016E11	SAU802161
E3M10000032F01	EFA201999	E1M10000262E07	ECO103973	S1M10000016F11	SAU801188
E3M10000032G01	EFA200807	E1M10000262E08	ECO103262	S1M10000016F11	SAU801189
E3M10000032A02	EFA202006	E1M10000262E08	ECO103878	S1M10000016A12	SAU801476
E3M10000032C02	EFA201888	E1M10000262E08	ECO204942	S1M10000016B12	SAU802237
E3M10000032D02	EFA201999	E1M10000262B10	ECO102872	S1M10000016B12	SAU802236
E3M10000032F02	EFA201987	E1M10000262H10	ECO101480	S1M10000016C12	SAU800542
E3M10000032F02	EFA201993	E1M10000262G11	ECO102324	S1M10000016E12	SAU800006
E3M10000032G02	EFA200807	E1M10000262D12	ECO102227	S1M10000017C01	SAU801632
E3M10000032B03	EFA200418	E1M10000262G12	ECO100169	S1M10000017F01	SAU800546
E3M10000032C03	EFA202296	E1M10000263F01	ECO101684	S1M10000017A02	SAU801261
E3M10000032D03	EFA200562	E1M10000263H05	ECO102578	S1M10000017B02	SAU800772
E3M10000032F03	EFA201984	E1M10000263C06	ECO104147	S1M10000017G02	SAU800001
E3M10000032A04	EFA201699	E1M10000263G06	ECO103244	S1M10000017A03	SAU801183
E3M10000032B04	EFA202007	E1M10000263B07	ECO101067	S1M10000017A03	SAU801184
E3M10000032E04	EFA200310	E1M10000263F08	ECO102216	S1M10000017C03	SAU800551
E3M10000032E04	EFA200317	E1M10000263A10	ECO102637	S1M10000017D03	SAU800542
E3M10000032G04	EFA202006	E1M10000263A11	ECO101259	S1M10000017A04	SAU802154
E3M10000032B05	EFA202003	E1M10000263A11	ECO101258	S1M10000017E04	SAU802230
E3M10000032E05	EFA200840	E1M10000263H11	ECO103223	S1M10000017F04	SAU802245
E3M10000032F05	EFA200811	E1M10000263C12	ECO103232	S1M10000017F04	SAU802244
E3M10000032G05	EFA200418	E1M10000263C12	ECO103233	S1M10000017B05	SAU801481
E3M10000032H05	EFA200958	E1M10000263D12	ECO103242	S1M10000017B05	SAU403191
E3M10000032A06	EFA202298	E1M10000263D12	ECO103243	S1M10000017C05	SAU801185
E3M10000032C06	EFA201457	E1M10000264B02	ECO104091	S1M10000017E05	SAU802612
E3M10000032D06	EFA201888	E1M10000264B02	ECO104092	S1M10000017F05	SAU802557
E3M10000032G06	EFA202013	E1M10000264C02	ECO103217	S1M10000017G05	SAU802192
E3M10000032H06	EFA201433	E1M10000264F02	ECO103886	S1M10000017F06	SAU800588
E3M10000032A07	EFA201699	E1M10000264D03	ECO103237	S1M10000017G06	SAU802426
E3M10000032F07	EFA200677	E1M10000264D03	ECO103238	S1M10000017A07	SAU800537
E3M10000032G07	EFA202378	E1M10000264F03	ECO103185	S1M10000017A07	SAU800536
E3M10000032A08	EFA204646	E1M10000264A04	ECO102555	S1M10000017B07	SAU802225
E3M10000032B08	EFA200698	E1M10000264A04	ECO102556	S1M10000017A08	SAU801193
E3M10000032B08	EFA200699	E1M10000264B04	ECO102294	S1M10000017B08	SAU801184
E3M10000032F08	EFA200805	E1M10000264B04	ECO102295	S1M10000017C08	SAU801791
E3M10000032H08	EFA200457	E1M10000264C04	ECO100256	S1M10000017E08	SAU800700
E3M10000032A09	EFA200179	E1M10000264E04	ECO102033	S1M10000017B09	SAU800543
E3M10000032C09	EFA201978	E1M10000264E04	ECO202902	S1M10000017C09	SAU801273
E3M10000032D09	EFA201888	E1M10000264F04	ECO103262	S1M10000017D09	SAU802232
E3M10000032H09	EFA202012	E1M10000264F04	ECO103878	S1M10000017D09	SAU802231
E3M10000032A10	EFA201986	E1M10000264F04	ECO204942	S1M10000017B10	SAU800543
E3M10000032A10	EFA205255	E1M10000264B05	ECO103265	S1M10000017B10	SAU203433
E3M10000032E10	EFA200807	E1M10000264B06	ECO100875	S1M10000017C10	SAU800260

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000032H10	EFA201028	E1M10000264G09	ECO103232	S1M10000017C10	SAU800261
E3M10000032A11	EFA201028	E1M10000264G09	ECO103233	S1M10000017D10	SAU800932
E3M10000032A11	EFA201041	E1M10000264D11	ECO104090	S1M10000017D10	SAU800931
E3M10000032B11	EFA202007	E1M10000264F11	ECO100095	S1M10000017A11	SAU800005
E3M10000032C11	EFA200805	E1M10000264H11	ECO103878	S1M10000017B11	SAU800543
E3M10000032E11	EFA201984	E1M10000264H11	ECO204942	S1M10000017B11	SAU203433
E3M10000032F11	EFA201028	E1M10000264B12	ECO103226	S1M10000017C11	SAU802232
E3M10000032B12	EFA201886	E1M10000264B12	ECO103227	S1M10000017C11	SAU802231
E3M10000032C12	EFA201993	E1M10000264C12	ECO102827	S1M10000017E11	SAU802714
E3M10000032D12	EFA201993	E1M10000264C12	ECO102828	S1M10000017F11	SAU802520
E3M10000032E12	EFA200515	E1M10000265A02	ECO103231	S1M10000017A12	SAU801251
E3M10000032F12	EFA200538	E1M10000265E02	ECO103885	S1M10000017B12	SAU802459
E3M10000033B01	EFA200326	E1M10000265G02	ECO100170	S1M10000017B12	SAU103780
E3M10000033C01	EFA200418	E1M10000265D04	ECO103885	S1M10000017C12	SAU801094
E3M10000033D01	EFA202180	E1M10000265F04	ECO104131	S1M10000017C12	SAU801095
E3M10000033F01	EFA200807	E1M10000265E05	ECO103885	S1M10000018C01	SAU800542
E3M10000033B02	EFA201985	E1M10000265H05	ECO101067	S1M10000018D01	SAU802507
E3M10000033C02	EFA201884	E1M10000265H05	ECO101068	S1M10000018E01	SAU802309
E3M10000033E02	EFA201155	E1M10000265C09	ECO100886	S1M10000018H01	SAU800160
E3M10000033F02	EFA202003	E1M10000265E09	ECO103262	S1M10000018B02	SAU801355
E3M10000033G02	EFA202213	E1M10000265E09	ECO103878	S1M10000018B02	SAU801354
E3M10000033H02	EFA201983	E1M10000265E09	ECO204942	S1M10000018C02	SAU800014
E3M10000033A03	EFA201009	E1M10000265F09	ECO103116	S1M10000018D02	SAU802160
E3M10000033E03	EFA201984	E1M10000265F09	ECO103115	S1M10000018E02	SAU801038
E3M10000033E03	EFA201983	E1M10000265H10	ECO103020	S1M10000018H02	SAU801900
E3M10000033F03	EFA200192	E1M10000265A11	ECO103481	S1M10000018H02	SAU801899
E3M10000033G03	EFA200457	E1M10000265B11	ECO103781	S1M10000018A03	SAU802246
E3M10000033A04	EFA202160	E1M10000265C11	ECO104093	S1M10000018A03	SAU802247
E3M10000033B04	EFA200794	E1M10000266D02	ECO101686	S1M10000018B03	SAU801388
E3M10000033D04	EFA201047	E1M10000266H02	ECO103237	S1M10000018C03	SAU800924
E3M10000033E04	EFA200457	E1M10000266F04	ECO102828	S1M10000018C03	SAU800925
E3M10000033F04	EFA202006	E1M10000266H04	ECO103263	S1M10000018D03	SAU802238
E3M10000033G04	EFA200515	E1M10000266H05	ECO100169	S1M10000018E03	SAU800120
E3M10000033H04	EFA200677	E1M10000266B06	ECO103885	S1M10000018F03	SAU801354
E3M10000033A05	EFA201977	E1M10000266F11	ECO103617	S1M10000018G03	SAU802223
E3M10000033B05	EFA200811	E1M10000267F01	ECO100836	S1M10000018A04	SAU800217
E3M10000033C05	EFA200811	E1M10000267E04	ECO103263	S1M10000018C04	SAU802244
E3M10000033C05	EFA200812	E1M10000267A05	ECO103074	S1M10000018D04	SAU802233
E3M10000033D05	EFA201981	E1M10000267A05	ECO103075	S1M10000018E04	SAU802328
E3M10000033E05	EFA202160	E1M10000267B05	ECO103263	S1M10000018F04	SAU800191
E3M10000033F05	EFA200805	E1M10000267A07	ECO103222	S1M10000018F04	SAU800192
E3M10000033H05	EFA201979	E1M10000267A07	ECO103223	S1M10000018A05	SAU801355
E3M10000033A06	EFA201983	E1M10000267H07	ECO102828	S1M10000018A05	SAU801354
E3M10000033B06	EFA202180	E1M10000267E09	ECO103233	S1M10000018B05	SAU800537
E3M10000033D06	EFA201025	E1M10000267E09	ECO103234	S1M10000018E05	SAU800839
E3M10000033D06	EFA201028	E1M10000267G09	ECO102556	S1M10000018G05	SAU800526
E3M10000033G06	EFA202274	E1M10000267H09	ECO103883	S1M10000018A06	SAU800984
E3M10000033A07	EFA201512	E1M10000267A10	ECO104181	S1M10000018C06	SAU801670
E3M10000033E07	EFA200807	E1M10000267A10	ECO104180	S1M10000018C06	SAU801671
E3M10000033F07	EFA200807	E1M10000267E10	ECO100180	S1M10000018F06	SAU801237
E3M10000033G07	EFA201041	E1M10000267C11	ECO103223	S1M10000018F07	SAU800275
E3M10000033H07	EFA200807	E1M10000267E11	ECO103775	S1M10000018G07	SAU800492
E3M10000033A08	EFA200457	E1M10000267B12	ECO103263	S1M10000018G07	SAU800493

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000033B08	EFA202007	E1M10000267E12	ECO103832	S1M10000018H07	SAU800005
E3M10000033E08	EFA202180	E1M10000267E12	ECO103833	S1M10000018A08	SAU802246
E3M10000033F08	EFA201993	E1M10000268F03	ECO103223	S1M10000018A08	SAU802247
E3M10000033G08	EFA200841	E1M10000268D04	ECO103244	S1M10000018C08	SAU802195
E3M10000033H08	EFA202001	E1M10000268E04	ECO101685	S1M10000018C08	SAU802194
E3M10000033B09	EFA201987	E1M10000268F06	ECO101180	S1M10000018E08	SAU802262
E3M10000033C09	EFA201970	E1M10000268E07	ECO103226	S1M10000018F08	SAU802654
E3M10000033D09	EFA201984	E1M10000268E07	ECO103227	S1M10000018G08	SAU802586
E3M10000033E09	EFA200621	E1M10000268A08	ECO103481	S1M10000018G08	SAU802585
E3M10000033G09	EFA200457	E1M10000268B08	ECO103243	S1M10000018G08	SAU802587
E3M10000033H09	EFA201028	E1M10000268D08	ECO103263	S1M10000018A09	SAU800217
E3M10000033C10	EFA201986	E1M10000268G08	ECO102636	S1M10000018B09	SAU801844
E3M10000033C10	EFA205255	E1M10000268B09	ECO103263	S1M10000018B09	SAU801843
E3M10000033D10	EFA200326	E1M10000268E09	ECO103883	S1M10000018C09	SAU801753
E3M10000033F10	EFA202012	E1M10000268F09	ECO103221	S1M10000018C09	SAU801754
E3M10000033H10	EFA202170	E1M10000268F09	ECO103222	S1M10000018D09	SAU801751
E3M10000033A11	EFA201028	E1M10000268G09	ECO103237	S1M10000018E09	SAU802654
E3M10000033C11	EFA202217	E1M10000268G09	ECO103238	S1M10000018F09	SAU802222
E3M10000033D11	EFA202007	E1M10000268E10	ECO103886	S1M10000018G09	SAU802586
E3M10000033E11	EFA201977	E1M10000268A11	ECO101812	S1M10000018G09	SAU802585
E3M10000033H11	EFA202013	E1M10000268G11	ECO102324	S1M10000018G09	SAU802587
E3M10000033C12	EFA201601	E1M10000268G12	ECO102839	S1M10000018H09	SAU800605
E3M10000033F12	EFA200811	E1M10000269D01	ECO103231	S1M10000018A10	SAU801630
E3M10000033F12	EFA200812	E1M10000269D01	ECO103232	S1M10000018B10	SAU801554
E3M10000033G12	EFA200192	E1M10000269B02	ECO103886	S1M10000018C10	SAU801668
E3M10000034D01	EFA202006	E1M10000269D03	ECO103481	S1M10000018D10	SAU802654
E3M10000034E01	EFA201999	E1M10000269D04	ECO103231	S1M10000018F10	SAU800539
E3M10000034A02	EFA200805	E1M10000269H04	ECO103262	S1M10000018F10	SAU800540
E3M10000034B02	EFA202217	E1M10000269H04	ECO103878	S1M10000018G10	SAU802244
E3M10000034C02	EFA201165	E1M10000269H04	ECO204942	S1M10000018G10	SAU802243
E3M10000034C02	EFA201163	E1M10000269B05	ECO101259	S1M10000018H10	SAU800546
E3M10000034D02	EFA202013	E1M10000269D05	ECO102828	S1M10000018A11	SAU802246
E3M10000034F02	EFA201999	E1M10000269H05	ECO102227	S1M10000018A11	SAU802247
E3M10000034G02	EFA200805	E1M10000269A06	ECO103231	S1M10000018B11	SAU802100
E3M10000034H02	EFA200239	E1M10000269A06	ECO103232	S1M10000018B11	SAU802099
E3M10000034H02	EFA200240	E1M10000269E07	ECO104093	S1M10000018C11	SAU802049
E3M10000034A03	EFA201975	E1M10000269F07	ECO103243	S1M10000018D11	SAU800542
E3M10000034F03	EFA200840	E1M10000269E10	ECO104090	S1M10000018E11	SAU802232
E3M10000034G03	EFA201978	E1M10000269D11	ECO103293	S1M10000018E11	SAU802231
E3M10000034H03	EFA200805	E1M10000269C12	ECO101232	S1M10000018A12	SAU802681
E3M10000034A04	EFA200840	E1M10000269C12	ECO101233	S1M10000018C12	SAU802681
E3M10000034B04	EFA200454	E1M10000269G12	ECO101324	S1M10000018D12	SAU801630
E3M10000034C04	EFA200807	E1M10000271F02	ECO103223	S1M10000018E12	SAU802506
E3M10000034D04	EFA202003	E1M10000271H02	ECO104168	S1M10000018F12	SAU802160
E3M10000034E04	EFA202013	E1M10000271E03	ECO101444	S1M10000018G12	SAU800543
E3M10000034F04	EFA202013	E1M10000271G03	ECO101475	S1M10000019C01	SAU800517
E3M10000035B01	EFA202298	E1M10000271G03	ECO101476	S1M10000019D01	SAU802181
E3M10000035C01	EFA202006	E1M10000271G03	ECO201962	S1M10000019E01	SAU801647
E3M10000035F01	EFA201981	E1M10000271B04	ECO100886	S1M10000019E01	SAU801646
E3M10000035A02	EFA202015	E1M10000271G04	ECO101259	S1M10000019F01	SAU800771
E3M10000035D02	EFA202001	E1M10000271B05	ECO103264	S1M10000019A02	SAU800385
E3M10000035F02	EFA201507	E1M10000271E05	ECO101256	S1M10000019D02	SAU800680
E3M10000035G02	EFA202013	E1M10000271E05	ECO101257	S1M10000019E02	SAU800607

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000035G02	EFA202007	E1M10000271C07	ECO103264	S1M10000019A03	SAU800591
E3M10000035B03	EFA202006	E1M10000271C07	ECO103265	S1M10000019B03	SAU801253
E3M10000035C03	EFA201981	E1M10000271G07	ECO102302	S1M10000019D03	SAU800782
E3M10000035D03	EFA202217	E1M10000271G10	ECO102324	S1M10000019B04	SAU801812
E3M10000035E03	EFA201984	E1M10000271F11	ECO102636	S1M10000019C04	SAU802473
E3M10000035F03	EFA205207	E1M10000271E12	ECO101324	S1M10000019D04	SAU802154
E3M10000035H03	EFA202168	E1M10000271F12	ECO102501	S1M10000019G04	SAU802238
E3M10000035A04	EFA202012	E1M10000272F02	ECO104237	S1M10000019A05	SAU802160
E3M10000035C04	EFA200840	E1M10000272G03	ECO103262	S1M10000019C05	SAU800545
E3M10000035D04	EFA200418	E1M10000272G03	ECO103878	S1M10000019D05	SAU801275
E3M10000035E04	EFA200841	E1M10000272G03	ECO204942	S1M10000019F05	SAU801731
E3M10000035G04	EFA201987	E1M10000272A04	ECO103221	S1M10000019H05	SAU802229
E3M10000035A05	EFA200418	E1M10000272F05	ECO103914	S1M10000019H05	SAU802228
E3M10000035C05	EFA200807	E1M10000272A06	ECO103223	S1M10000019A06	SAU801605
E3M10000035D05	EFA201999	E1M10000272B06	ECO103244	S1M10000019C06	SAU802241
E3M10000035E05	EFA200326	E1M10000272H07	ECO100886	S1M10000019C06	SAU802240
E3M10000035G05	EFA200807	E1M10000272B08	ECO103481	S1M10000019D06	SAU802442
E3M10000035A06	EFA202012	E1M10000272C08	ECO100169	S1M10000019F06	SAU801565
E3M10000035C06	EFA202001	E1M10000272D08	ECO102213	S1M10000019A07	SAU800492
E3M10000035F06	EFA202168	E1M10000272G08	ECO104243	S1M10000019A07	SAU800493
E3M10000035H06	EFA201987	E1M10000272G08	ECO104242	S1M10000019B07	SAU800537
E3M10000035B07	EFA202012	E1M10000272H08	ECO100223	S1M10000019C07	SAU801275
E3M10000035C07	EFA200807	E1M10000272C09	ECO104091	S1M10000019D07	SAU802654
E3M10000035E07	EFA202378	E1M10000272C09	ECO104092	S1M10000019E07	SAU800591
E3M10000035F07	EFA201993	E1M10000272D09	ECO101684	S1M10000019G07	SAU801476
E3M10000035A08	EFA200840	E1M10000272D09	ECO101685	S1M10000019A08	SAU801631
E3M10000035B08	EFA200677	E1M10000272D09	ECO101686	S1M10000019B08	SAU800122
E3M10000035C08	EFA201979	E1M10000272G09	ECO101184	S1M10000019B08	SAU800123
E3M10000035C08	EFA201980	E1M10000272H09	ECO101324	S1M10000019C08	SAU801240
E3M10000035E08	EFA201999	E1M10000273E01	ECO100095	S1M10000019F08	SAU801517
E3M10000035F08	EFA202006	E1M10000273D02	ECO103231	S1M10000019G08	SAU802654
E3M10000035G08	EFA201028	E1M10000273E03	ECO103886	S1M10000019H08	SAU800016
E3M10000035A09	EFA201987	E1M10000273D05	ECO101324	S1M10000019A09	SAU801193
E3M10000035C09	EFA200842	E1M10000273E05	ECO103710	S1M10000019B09	SAU801131
E3M10000035E09	EFA205207	E1M10000273G05	ECO103242	S1M10000019B09	SAU801132
E3M10000035F09	EFA201986	E1M10000273G05	ECO103243	S1M10000019D09	SAU802649
E3M10000035F09	EFA205255	E1M10000273C07	ECO103263	S1M10000019F09	SAU800517
E3M10000035G09	EFA202217	E1M10000273C08	ECO103230	S1M10000019F09	SAU202623
E3M10000035G09	EFA202216	E1M10000273C08	ECO103231	S1M10000019G09	SAU800537
E3M10000035G09	EFA104836	E1M10000273G11	ECO100184	S1M10000019B10	SAU801518
E3M10000035H09	EFA200805	E1M10000273G11	ECO100185	S1M10000019G10	SAU801727
E3M10000035B10	EFA201888	E1M10000273H11	ECO103185	S1M10000019G10	SAU801726
E3M10000035D10	EFA202012	E1M10000273B12	ECO100869	S1M10000019A11	SAU802154
E3M10000035E10	EFA202298	E1M10000273G12	ECO104090	S1M10000019B11	SAU800286
E3M10000035F10	EFA201867	E1M10000274C01	ECO103233	S1M10000019C11	SAU800535
E3M10000035G10	EFA200840	E1M10000274C01	ECO103234	S1M10000019F11	SAU801719
E3M10000035A11	EFA201888	E1M10000274E01	ECO103001	S1M10000019G11	SAU802229
E3M10000035B11	EFA202012	E1M10000274G01	ECO101259	S1M10000019A12	SAU801680
E3M10000035C11	EFA202006	E1M10000274G01	ECO101258	S1M10000019A12	SAU801679
E3M10000035D11	EFA202378	E1M10000274H05	ECO103262	S1M10000019B12	SAU802238
E3M10000035E11	EFA200807	E1M10000274H05	ECO103878	S1M10000019C12	SAU801193
E3M10000035F11	EFA202006	E1M10000274H05	ECO204942	S1M10000019D12	SAU802226
E3M10000035G11	EFA200418	E1M10000274D06	ECO102556	S1M10000020E01	SAU801186

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000035H11	EFA200239	E1M10000274F06	ECO102827	S1M10000020F01	SAU800391
E3M10000035H11	EFA200240	E1M10000274F06	ECO102828	S1M10000020G01	SAU800195
E3M10000035B12	EFA200840	E1M10000274F07	ECO102637	S1M10000020H01	SAU802686
E3M10000035C12	EFA202006	E1M10000274F07	ECO102638	S1M10000020B02	SAU801303
E3M10000035E12	EFA202006	E1M10000274A08	ECO103886	S1M10000020H02	SAU800543
E3M10000035F12	EFA201878	E1M10000274D08	ECO103185	S1M10000020B03	SAU800089
E3M10000036B01	EFA201869	E1M10000274F08	ECO101686	S1M10000020D03	SAU800542
E3M10000036B01	EFA201867	E1M10000274F09	ECO103886	S1M10000020E03	SAU802245
E3M10000036C01	EFA201982	E1M10000274D10	ECO103220	S1M10000020D04	SAU800324
E3M10000036E01	EFA201869	E1M10000274D10	ECO103221	S1M10000020D04	SAU800325
E3M10000036G01	EFA201977	E1M10000274D11	ECO102636	S1M10000020E04	SAU802226
E3M10000036G01	EFA203137	E1M10000274D12	ECO103523	S1M10000020E04	SAU802225
E3M10000036G02	EFA201878	E1M10000274G12	ECO101324	S1M10000020H04	SAU802240
E3M10000036G02	EFA201869	E1M10000275C01	ECO103884	S1M10000020A05	SAU801263
E3M10000036H02	EFA200840	E1M10000275E01	ECO103236	S1M10000020B05	SAU801279
E3M10000036A03	EFA202217	E1M10000275E01	ECO103237	S1M10000020F05	SAU802249
E3M10000036B03	EFA200192	E1M10000275B02	ECO100094	S1M10000020G05	SAU801011
E3M10000036C03	EFA202012	E1M10000275B02	ECO100095	S1M10000020A06	SAU802230
E3M10000036D03	EFA202006	E1M10000275A03	ECO101324	S1M10000020B06	SAU801491
E3M10000036F03	EFA201987	E1M10000275B03	ECO102637	S1M10000020D06	SAU800367
E3M10000036G03	EFA200457	E1M10000275G03	ECO103161	S1M10000020E06	SAU800232
E3M10000036H03	EFA202012	E1M10000275D04	ECO103231	S1M10000020F06	SAU801900
E3M10000036A04	EFA201982	E1M10000275H04	ECO103878	S1M10000020F06	SAU801899
E3M10000036D04	EFA200538	E1M10000275H04	ECO204942	S1M10000020H06	SAU801179
E3M10000036E04	EFA201999	E1M10000275C05	ECO103886	S1M10000020H06	SAU801180
E3M10000036F04	EFA200192	E1M10000275E05	ECO103221	S1M10000020A07	SAU800506
E3M10000036G04	EFA202007	E1M10000275A06	ECO101780	S1M10000020A07	SAU800505
E3M10000036H04	EFA205288	E1M10000275C06	ECO103886	S1M10000020B07	SAU800001
E3M10000036A05	EFA200677	E1M10000275G06	ECO103624	S1M10000020D07	SAU801185
E3M10000036E05	EFA201984	E1M10000275G06	ECO103625	S1M10000020D07	SAU801186
E3M10000036F05	EFA200310	E1M10000275A08	ECO103298	S1M10000020F07	SAU801170
E3M10000036H05	EFA201976	E1M10000275D08	ECO101232	S1M10000020G07	SAU801011
E3M10000036A06	EFA200418	E1M10000275D08	ECO101233	S1M10000020A08	SAU600582
E3M10000036B06	EFA201999	E1M10000275F09	ECO103221	S1M10000020D08	SAU802249
E3M10000036C06	EFA202007	E1M10000275D10	ECO103414	S1M10000020E08	SAU800545
E3M10000036D06	EFA201978	E1M10000275G11	ECO103886	S1M10000020G08	SAU801900
E3M10000036G06	EFA201886	E1M10000275B12	ECO103262	S1M10000020H08	SAU801741
E3M10000036H06	EFA201999	E1M10000275B12	ECO103878	S1M10000020B09	SAU800153
E3M10000036A07	EFA202015	E1M10000275B12	ECO204942	S1M10000020C09	SAU801183
E3M10000036B07	EFA200839	E1M10000275C12	ECO101685	S1M10000020F09	SAU801011
E3M10000036B07	EFA200840	E1M10000275G12	ECO103220	S1M10000020G09	SAU801900
E3M10000036C07	EFA200841	E1M10000276E01	ECO103262	S1M10000020C10	SAU802232
E3M10000036E07	EFA202298	E1M10000276E01	ECO103878	S1M10000020C10	SAU802231
E3M10000036H07	EFA200805	E1M10000276E01	ECO204942	S1M10000020G10	SAU802224
E3M10000036A08	EFA200839	E1M10000276F01	ECO101763	S1M10000020G10	SAU802223
E3M10000036A08	EFA200840	E1M10000276A03	ECO100095	S1M10000020H10	SAU800543
E3M10000036B08	EFA201888	E1M10000276B03	ECO103188	S1M10000020A11	SAU800005
E3M10000036B08	EFA201886	E1M10000276A04	ECO100549	S1M10000020C11	SAU802507
E3M10000036C08	EFA201888	E1M10000276D04	ECO101259	S1M10000020E11	SAU800467
E3M10000036E08	EFA201987	E1M10000276G04	ECO100094	S1M10000020F11	SAU800160
E3M10000036F08	EFA202007	E1M10000276G04	ECO100095	S1M10000020F11	SAU800161
E3M10000036H08	EFA201883	E1M10000276H04	ECO104213	S1M10000020G11	SAU800391
E3M10000036A09	EFA201993	E1M10000312C01	ECO103223	S1M10000020H11	SAU802047

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000036B09	EFA202013	E1M10000312B02	ECO103229	S1M10000020A12	SAU800548
E3M10000036C09	EFA200418	E1M10000312B02	ECO103230	S1M10000020B12	SAU800218
E3M10000036D09	EFA202012	E1M10000312D02	ECO100025	S1M10000020D12	SAU801186
E3M10000036F09	EFA202274	E1M10000312D02	ECO100026	S1M10000020E12	SAU801185
E3M10000036H09	EFA201999	E1M10000312F03	ECO103886	S1M10000020F12	SAU801493
E3M10000036A10	EFA201987	E1M10000312A04	ECO103242	S1M10000020G12	SAU801631
E3M10000036C10	EFA200418	E1M10000312A04	ECO103243	S1M10000021D01	SAU802468
E3M10000036D10	EFA201869	E1M10000312D04	ECO103230	S1M10000021E01	SAU801898
E3M10000036F10	EFA201999	E1M10000312F04	ECO101739	S1M10000021G01	SAU801511
E3M10000036G10	EFA201999	E1M10000312H04	ECO102553	S1M10000021E02	SAU802586
E3M10000036H10	EFA200841	E1M10000312E05	ECO103224	S1M10000021E02	SAU802585
E3M10000036H10	EFA203246	E1M10000312C06	ECO103240	S1M10000021F02	SAU801760
E3M10000036B11	EFA202217	E1M10000312B07	ECO103218	S1M10000021D03	SAU801139
E3M10000036C11	EFA201981	E1M10000312G07	ECO103262	S1M10000021E03	SAU801572
E3M10000036D11	EFA200807	E1M10000312G07	ECO103878	S1M10000021G03	SAU801251
E3M10000036B12	EFA201999	E1M10000312G07	ECO204942	S1M10000021A04	SAU800111
E3M10000036B12	EFA201997	E1M10000312H07	ECO103223	S1M10000021C04	SAU800543
E3M10000036D12	EFA202007	E1M10000312E08	ECO100135	S1M10000021D04	SAU802071
E3M10000037C01	EFA202168	E1M10000312D09	ECO103882	S1M10000021D04	SAU802070
E3M10000037E01	EFA201926	E1M10000312D09	ECO103883	S1M10000021F04	SAU802246
E3M10000037F01	EFA202217	E1M10000312E09	ECO101259	S1M10000021F04	SAU802247
E3M10000037G01	EFA200457	E1M10000312F09	ECO101259	S1M10000021H04	SAU802246
E3M10000037B02	EFA201025	E1M10000312G09	ECO101684	S1M10000021H04	SAU802247
E3M10000037B02	EFA201028	E1M10000312A10	ECO103226	S1M10000021A05	SAU800732
E3M10000037C02	EFA202180	E1M10000312A10	ECO103227	S1M10000021B05	SAU802246
E3M10000037D02	EFA201028	E1M10000313E01	ECO102827	S1M10000021B05	SAU802247
E3M10000037E02	EFA202006	E1M10000313F01	ECO102827	S1M10000021C05	SAU801139
E3M10000037F02	EFA202001	E1M10000313A02	ECO103262	S1M10000021E05	SAU801089
E3M10000037G02	EFA201993	E1M10000313A02	ECO103263	S1M10000021F05	SAU801760
E3M10000037A03	EFA202007	E1M10000313D02	ECO103886	S1M10000021H05	SAU802235
E3M10000037B03	EFA202015	E1M10000313H02	ECO101684	S1M10000021A06	SAU800543
E3M10000037D03	EFA201165	E1M10000313A03	ECO101324	S1M10000021B06	SAU800542
E3M10000037D03	EFA201163	E1M10000313D03	ECO103235	S1M10000021D06	SAU801631
E3M10000037E03	EFA202160	E1M10000313D03	ECO103236	S1M10000021E06	SAU802049
E3M10000037G03	EFA200677	E1M10000313G03	ECO103223	S1M10000021F06	SAU801727
E3M10000037C04	EFA202217	E1M10000313B04	ECO100095	S1M10000021G06	SAU800566
E3M10000037D04	EFA201987	E1M10000313D04	ECO103242	S1M10000021A07	SAU800287
E3M10000037C05	EFA200454	E1M10000313B05	ECO103223	S1M10000021A07	SAU200106
E3M10000037D05	EFA201982	E1M10000313A06	ECO103024	S1M10000021B07	SAU800453
E3M10000037E05	EFA202168	E1M10000313F06	ECO100094	S1M10000021B07	SAU200237
E3M10000037G05	EFA200677	E1M10000313F06	ECO100093	S1M10000021C07	SAU802646
E3M10000037H05	EFA200192	E1M10000313A07	ECO100905	S1M10000021F07	SAU800514
E3M10000037A06	EFA200807	E1M10000313C07	ECO101844	S1M10000021H07	SAU802225
E3M10000037C06	EFA202217	E1M10000313F07	ECO204845	S1M10000021A08	SAU800719
E3M10000037C06	EFA202216	E1M10000313G07	ECO102553	S1M10000021C08	SAU801439
E3M10000037D06	EFA205285	E1M10000313G07	ECO102554	S1M10000021G08	SAU801663
E3M10000037F06	EFA201987	E1M10000313D08	ECO103242	S1M10000021H08	SAU801760
E3M10000037G06	EFA202214	E1M10000313F08	ECO103775	S1M10000021A09	SAU800366
E3M10000037B07	EFA201999	E1M10000313F09	ECO101259	S1M10000021D09	SAU801263
E3M10000037C07	EFA202001	E1M10000313A10	ECO103684	S1M10000021E09	SAU801186
E3M10000037C07	EFA205285	E1M10000314F01	ECO103230	S1M10000021F09	SAU800490
E3M10000037E07	EFA201987	E1M10000314F01	ECO103231	S1M10000021A10	SAU801183
E3M10000037F07	EFA201987	E1M10000314B02	ECO101324	S1M10000021B10	SAU801084

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000037G07	EFA200421	E1M10000314H03	ECO103481	S1M10000021C10	SAU801237
E3M10000037H07	EFA201974	E1M10000314A04	ECO103481	S1M10000021D10	SAU801663
E3M10000037A08	EFA205288	E1M10000314H04	ECO103263	S1M10000021C11	SAU801186
E3M10000037B08	EFA201888	E1M10000314A05	ECO102129	S1M10000021F11	SAU800153
E3M10000037E08	EFA201028	E1M10000314B05	ECO103228	S1M10000021H11	SAU801181
E3M10000037G08	EFA201869	E1M10000314G05	ECO103481	S1M10000021C12	SAU800491
E3M10000037A09	EFA201827	E1M10000314D06	ECO101870	S1M10000021E12	SAU802154
E3M10000037D09	EFA202013	E1M10000314D06	ECO101871	S1M10000021G12	SAU802654
E3M10000037D09	EFA202007	E1M10000314F06	ECO103228	S1M10000022E01	SAU800530
E3M10000037A10	EFA202015	E1M10000314F06	ECO103229	S1M10000022A02	SAU801631
E3M10000037E10	EFA201009	E1M10000314G09	ECO103186	S1M10000022B02	SAU801631
E3M10000037G10	EFA201985	E1M10000314D10	ECO103237	S1M10000022C02	SAU801760
E3M10000037H10	EFA202168	E1M10000314D10	ECO103238	S1M10000022A03	SAU801526
E3M10000037B11	EFA200192	E1M10000314G10	ECO103263	S1M10000022B03	SAU801511
E3M10000037C11	EFA201920	E1M10000314C11	ECO104108	S1M10000022C03	SAU802240
E3M10000037D11	EFA201987	E1M10000314E11	ECO101452	S1M10000022D03	SAU802226
E3M10000037G11	EFA200840	E1M10000314G11	ECO104243	S1M10000022E03	SAU801511
E3M10000037C12	EFA200807	E1M10000314G11	ECO104242	S1M10000022G03	SAU800490
E3M10000037E12	EFA200192	E1M10000314B12	ECO102300	S1M10000022H03	SAU802254
E3M10000037F12	EFA205285	E1M10000314C12	ECO103242	S1M10000022C04	SAU801663
E3M10000038D01	EFA200418	E1M10000314C12	ECO103243	S1M10000022F04	SAU800391
E3M10000038B02	EFA201883	E1M10000314E12	ECO101995	S1M10000022G04	SAU801089
E3M10000038C02	EFA200677	E1M10000314E12	ECO101996	S1M10000022A05	SAU802224
E3M10000038D02	EFA202217	E1M10000315D01	ECO103684	S1M10000022B05	SAU802083
E3M10000038E02	EFA202006	E1M10000315D01	ECO103685	S1M10000022D05	SAU801089
E3M10000038G02	EFA202378	E1M10000315G01	ECO100886	S1M10000022E05	SAU800490
E3M10000038H02	EFA201984	E1M10000315F03	ECO102309	S1M10000022H05	SAU802218
E3M10000038A03	EFA200840	E1M10000315F04	ECO102192	S1M10000022H05	SAU203799
E3M10000038B03	EFA201601	E1M10000315F04	ECO102193	S1M10000022B06	SAU801663
E3M10000038C03	EFA200457	E1M10000315C05	ECO103240	S1M10000022C06	SAU801892
E3M10000038E03	EFA202003	E1M10000315C05	ECO103241	S1M10000022C06	SAU801891
E3M10000038G03	EFA201984	E1M10000315C05	ECO103242	S1M10000022D06	SAU802082
E3M10000038B04	EFA201984	E1M10000315G05	ECO101183	S1M10000022F06	SAU801263
E3M10000038D04	EFA200418	E1M10000315H06	ECO100875	S1M10000022H06	SAU800543
E3M10000038E04	EFA200418	E1M10000315G07	ECO100445	S1M10000022B07	SAU802654
E3M10000038F04	EFA200192	E1M10000315B08	ECO103237	S1M10000022C07	SAU801184
E3M10000038A05	EFA201888	E1M10000315C08	ECO103559	S1M10000022D07	SAU801181
E3M10000038B05	EFA201165	E1M10000315F08	ECO104213	S1M10000022F07	SAU801193
E3M10000038B05	EFA201163	E1M10000315D09	ECO103227	S1M10000022G07	SAU800517
E3M10000038C05	EFA200192	E1M10000315D09	ECO103228	S1M10000022H07	SAU801630
E3M10000038E05	EFA200457	E1M10000315E10	ECO103233	S1M10000022A08	SAU801618
E3M10000038F05	EFA202001	E1M10000315E10	ECO103234	S1M10000022B08	SAU802154
E3M10000038F05	EFA205285	E1M10000315G10	ECO100407	S1M10000022C08	SAU801934
E3M10000038H05	EFA202001	E1M10000315G10	ECO100408	S1M10000022C08	SAU801933
E3M10000038B06	EFA201163	E1M10000315C12	ECO100757	S1M10000022D08	SAU800173
E3M10000038F06	EFA202012	E1M10000315F12	ECO103161	S1M10000022F08	SAU800517
E3M10000038G06	EFA202006	E1M10000316D01	ECO101026	S1M10000022G08	SAU801597
E3M10000038H06	EFA201886	E1M10000316B02	ECO103775	S1M10000022H08	SAU801354
E3M10000038A07	EFA200805	E1M10000316D02	ECO103101	S1M10000022D09	SAU800491
E3M10000038B07	EFA202013	E1M10000316E02	ECO103220	S1M10000022E09	SAU801727
E3M10000038C07	EFA200590	E1M10000316E02	ECO103221	S1M10000022E09	SAU801726
E3M10000038E07	EFA200454	E1M10000316H04	ECO103161	S1M10000022E09	SAU203732
E3M10000038F07	EFA201883	E1M10000316A05	ECO103265	S1M10000022B10	SAU801184

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000038G07	EFA202177	E1M10000316F05	ECO102555	S1M10000022B11	SAU800491
E3M10000038G07	EFA202176	E1M10000316F05	ECO102556	S1M10000022C11	SAU801760
E3M10000038H07	EFA201981	E1M10000316G05	ECO103264	S1M10000022D11	SAU802510
E3M10000038A08	EFA202170	E1M10000316G05	ECO103265	S1M10000022F11	SAU800391
E3M10000038B08	EFA202001	E1M10000316A08	ECO103263	S1M10000022H11	SAU801733
E3M10000038D08	EFA202001	E1M10000316H08	ECO103220	S1M10000022A12	SAU801263
E3M10000038E08	EFA201869	E1M10000316B09	ECO101686	S1M10000022B12	SAU801263
E3M10000038H08	EFA201886	E1M10000316E09	ECO101324	S1M10000022G12	SAU801184
E3M10000038A09	EFA201926	E1M10000316E11	ECO103230	S1M10000023B01	SAU801355
E3M10000038B09	EFA201041	E1M10000316E11	ECO103231	S1M10000023D01	SAU801644
E3M10000038F09	EFA200662	E1M10000317C01	ECO104026	S1M10000023E01	SAU800542
E3M10000038H09	EFA202223	E1M10000317G02	ECO103886	S1M10000023G01	SAU800304
E3M10000038A10	EFA201987	E1M10000317D03	ECO103243	S1M10000023C02	SAU802245
E3M10000038C10	EFA200454	E1M10000317F03	ECO100023	S1M10000023C02	SAU802244
E3M10000038D10	EFA202217	E1M10000277D01	ECO103919	S1M10000023G02	SAU800490
E3M10000038F10	EFA202168	E1M10000277G01	ECO202238	S1M10000023G02	SAU800491
E3M10000038H10	EFA200421	E1M10000277F02	ECO101259	S1M10000023G02	SAU203500
E3M10000038A11	EFA201981	E1M10000277G03	ECO102764	S1M10000023H02	SAU800528
E3M10000038B11	EFA200457	E1M10000277A05	ECO100757	S1M10000023B03	SAU801900
E3M10000038D11	EFA202012	E1M10000277E05	ECO103100	S1M10000023B03	SAU801899
E3M10000038E11	EFA200677	E1M10000277C07	ECO100135	S1M10000023D03	SAU800528
E3M10000038F11	EFA201978	E1M10000277E07	ECO101034	S1M10000023G03	SAU800528
E3M10000038G11	EFA200811	E1M10000277G07	ECO103234	S1M10000023D04	SAU802247
E3M10000038H11	EFA201163	E1M10000277G07	ECO103235	S1M10000023E04	SAU801760
E3M10000038C12	EFA202168	E1M10000277G07	ECO103236	S1M10000023F04	SAU800952
E3M10000038D12	EFA200418	E1M10000277A08	ECO103881	S1M10000023F04	SAU800951
E3M10000039B01	EFA200811	E1M10000277A08	ECO103882	S1M10000023A05	SAU800490
E3M10000039E01	EFA200538	E1M10000277C08	ECO103696	S1M10000023A05	SAU800491
E3M10000039F01	EFA200457	E1M10000277C08	ECO103697	S1M10000023A05	SAU203500
E3M10000039G01	EFA200807	E1M10000277B10	ECO103832	S1M10000023D05	SAU800537
E3M10000039A02	EFA201124	E1M10000277B10	ECO103833	S1M10000023D05	SAU800536
E3M10000039A02	EFA201122	E1M10000277G10	ECO103221	S1M10000023H05	SAU801426
E3M10000039C02	EFA200842	E1M10000277B11	ECO103559	S1M10000023G06	SAU801354
E3M10000039D02	EFA201993	E1M10000278G01	ECO103240	S1M10000023H06	SAU800547
E3M10000039E02	EFA200418	E1M10000278G02	ECO103220	S1M10000023B07	SAU801572
E3M10000039F02	EFA200839	E1M10000278G02	ECO103221	S1M10000023D07	SAU801181
E3M10000039G02	EFA200192	E1M10000278B04	ECO102553	S1M10000023E07	SAU801181
E3M10000039H02	EFA202001	E1M10000278B04	ECO102554	S1M10000023F07	SAU802250
E3M10000039B03	EFA202001	E1M10000278H06	ECO103242	S1M10000023G07	SAU801201
E3M10000039D03	EFA200454	E1M10000278A07	ECO100095	S1M10000023H07	SAU800537
E3M10000039E03	EFA202378	E1M10000278C07	ECO103809	S1M10000023B08	SAU802245
E3M10000039F03	EFA200358	E1M10000278C08	ECO103100	S1M10000023B08	SAU802244
E3M10000039F03	EFA203061	E1M10000278H10	ECO101370	S1M10000023D08	SAU801354
E3M10000039B04	EFA201983	E1M10000278H10	ECO101369	S1M10000023F08	SAU802714
E3M10000039B04	EFA201982	E1M10000278B11	ECO101324	S1M10000023G08	SAU801644
E3M10000039C04	EFA201999	E1M10000278H11	ECO104213	S1M10000023A09	SAU802075
E3M10000039D04	EFA200457	E1M10000279G03	ECO100886	S1M10000023B09	SAU802075
E3M10000039C05	EFA205225	E1M10000279C05	ECO103243	S1M10000023D09	SAU802249
E3M10000039E05	EFA200192	E1M10000279G05	ECO103886	S1M10000023D09	SAU802248
E3M10000039G05	EFA202378	E1M10000279E07	ECO103881	S1M10000023G09	SAU802273
E3M10000039A06	EFA200457	E1M10000279E07	ECO103882	S1M10000023H09	SAU802075
E3M10000039B06	EFA200807	E1M10000279H07	ECO100885	S1M10000023B10	SAU800367
E3M10000039C06	EFA202217	E1M10000279F08	ECO103624	S1M10000023C10	SAU802545

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000039D06	EFA200418	E1M10000279F08	ECO103625	S1M10000023D10	SAU801645
E3M10000039F06	EFA205225	E1M10000279A09	ECO103097	S1M10000023E10	SAU802130
E3M10000039A07	EFA200326	E1M10000279B09	ECO103883	S1M10000023F10	SAU800591
E3M10000039B07	EFA200290	E1M10000279B09	ECO103884	S1M10000023H10	SAU801618
E3M10000039C07	EFA200309	E1M10000279C10	ECO103181	S1M10000023A11	SAU802249
E3M10000039C07	EFA200310	E1M10000279D10	ECO103181	S1M10000023A11	SAU802248
E3M10000039E07	EFA202214	E1M10000279E12	ECO103884	S1M10000023B11	SAU800259
E3M10000039F07	EFA200811	E1M10000280C01	ECO104092	S1M10000023C11	SAU800591
E3M10000039G07	EFA200192	E1M10000280C01	ECO104093	S1M10000023E11	SAU802154
E3M10000039H07	EFA202168	E1M10000280G01	ECO102299	S1M10000023F11	SAU800742
E3M10000039A08	EFA201999	E1M10000280B02	ECO103586	S1M10000023G11	SAU800259
E3M10000039B08	EFA201982	E1M10000280C03	ECO100069	S1M10000023A12	SAU801901
E3M10000039C08	EFA202003	E1M10000280C05	ECO103878	S1M10000023A12	SAU801900
E3M10000039E08	EFA201041	E1M10000280C05	ECO204942	S1M10000023B12	SAU802496
E3M10000039F08	EFA201999	E1M10000280E05	ECO100095	S1M10000023C12	SAU800962
E3M10000039H08	EFA201878	E1M10000280A06	ECO103263	S1M10000023D12	SAU802154
E3M10000039H08	EFA201869	E1M10000280B06	ECO101591	S1M10000023F12	SAU800591
E3M10000039B09	EFA200310	E1M10000280H06	ECO103231	S1M10000024D01	SAU800453
E3M10000039C09	EFA202160	E1M10000280A07	ECO100997	S1M10000024A02	SAU802233
E3M10000039G09	EFA200811	E1M10000280C07	ECO103219	S1M10000024C02	SAU800699
E3M10000039A10	EFA200239	E1M10000280G07	ECO100170	S1M10000024D02	SAU800517
E3M10000039A10	EFA200240	E1M10000280E08	ECO100886	S1M10000024F02	SAU802510
E3M10000039C10	EFA201999	E1M10000280F08	ECO102655	S1M10000024H02	SAU800006
E3M10000039G10	EFA201047	E1M10000280C09	ECO103263	S1M10000024D03	SAU801663
E3M10000039A11	EFA201985	E1M10000280H09	ECO103097	S1M10000024E03	SAU800006
E3M10000039B11	EFA202168	E1M10000280C10	ECO103219	S1M10000024F03	SAU801678
E3M10000039H11	EFA201878	E1M10000280C11	ECO103243	S1M10000024A04	SAU800006
E3M10000039H11	EFA201869	E1M10000280D11	ECO102304	S1M10000024C04	SAU801567
E3M10000040B01	EFA200358	E1M10000280H11	ECO102267	S1M10000024D04	SAU800304
E3M10000040F01	EFA201886	E1M10000280H11	ECO102266	S1M10000024H04	SAU800509
E3M10000040G01	EFA201983	E1M10000280F12	ECO103220	S1M10000024B05	SAU800118
E3M10000040B02	EFA200454	E1M10000280F12	ECO103221	S1M10000024E05	SAU802231
E3M10000040C02	EFA202168	E1M10000281B01	ECO103881	S1M10000024E05	SAU802230
E3M10000040G02	EFA201087	E1M10000281B01	ECO103880	S1M10000024F05	SAU801526
E3M10000040G02	EFA201084	E1M10000281C02	ECO102017	S1M10000024G05	SAU802231
E3M10000040H02	EFA200677	E1M10000281C02	ECO102018	S1M10000024G05	SAU802230
E3M10000040A03	EFA200733	E1M10000281C03	ECO101513	S1M10000024B06	SAU800547
E3M10000040B03	EFA202170	E1M10000281D04	ECO101346	S1M10000024E06	SAU800118
E3M10000040D03	EFA200538	E1M10000281D04	ECO101515	S1M10000024G06	SAU800118
E3M10000040F03	EFA202160	E1M10000281E07	ECO103480	S1M10000024H06	SAU800304
E3M10000040H03	EFA200179	E1M10000281E08	ECO104248	S1M10000024A07	SAU800517
E3M10000040D04	EFA202168	E1M10000281H09	ECO103668	S1M10000024C07	SAU800966
E3M10000040G04	EFA200841	E1M10000281B10	ECO103581	S1M10000024E07	SAU800966
E3M10000040H04	EFA201028	E1M10000281D11	ECO104257	S1M10000024G07	SAU802612
E3M10000040H04	EFA201041	E1M10000281G11	ECO103696	S1M10000024H07	SAU801081
E3M10000040A05	EFA202168	E1M10000281G11	ECO103697	S1M10000024A08	SAU800641
E3M10000040B05	EFA202013	E1M10000281D12	ECO102671	S1M10000024B08	SAU801408
E3M10000040B05	EFA202015	E1M10000281F12	ECO100445	S1M10000024E08	SAU800517
E3M10000040C05	EFA200805	E1M10000282D01	ECO102274	S1M10000024F08	SAU800491
E3M10000040G05	EFA202003	E1M10000282F01	ECO101729	S1M10000024G08	SAU800453
E3M10000040H05	EFA201028	E1M10000282D02	ECO103186	S1M10000024G08	SAU200237
E3M10000040H05	EFA201041	E1M10000282A03	ECO102346	S1M10000024H08	SAU800524
E3M10000040B06	EFA202136	E1M10000282F03	ECO102749	S1M10000024H08	SAU800523

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000040C06	EFA202007	E1M10000282C04	ECO102637	S1M10000024H08	SAU202690
E3M10000040A07	EFA200195	E1M10000282C04	ECO102638	S1M10000024B09	SAU801511
E3M10000040C07	EFA201869	E1M10000282E04	ECO103953	S1M10000024B10	SAU801905
E3M10000040G07	EFA202170	E1M10000282F04	ECO103160	S1M10000024D10	SAU802245
E3M10000040G07	EFA202168	E1M10000282H04	ECO103884	S1M10000024D10	SAU802244
E3M10000040H07	EFA201951	E1M10000282B05	ECO102921	S1M10000024F10	SAU801511
E3M10000040B08	EFA202378	E1M10000282F05	ECO101239	S1M10000024G10	SAU802496
E3M10000040C08	EFA200677	E1M10000282H05	ECO103625	S1M10000024A11	SAU802654
E3M10000040D08	EFA200192	E1M10000282A08	ECO100868	S1M10000024D11	SAU800700
E3M10000040F08	EFA202168	E1M10000282B08	ECO102554	S1M10000024G12	SAU802245
E3M10000040G08	EFA200660	E1M10000282D08	ECO102764	S1M10000024G12	SAU802244
E3M10000040G08	EFA200661	E1M10000282E08	ECO102868	S1M10000025B01	SAU801898
E3M10000040A09	EFA200807	E1M10000282E08	ECO102869	S1M10000025C01	SAU802154
E3M10000040B09	EFA200807	E1M10000282F08	ECO100093	S1M10000025D01	SAU801193
E3M10000040C09	EFA202174	E1M10000282G08	ECO102553	S1M10000025E01	SAU801193
E3M10000040C09	EFA202176	E1M10000282G08	ECO102554	S1M10000025B02	SAU802223
E3M10000040D09	EFA201951	E1M10000282H08	ECO100197	S1M10000025A03	SAU800920
E3M10000040F09	EFA202378	E1M10000282A09	ECO103884	S1M10000025B03	SAU802109
E3M10000040G09	EFA200839	E1M10000282C09	ECO103160	S1M10000025C03	SAU802246
E3M10000040H09	EFA201982	E1M10000282C11	ECO103237	S1M10000025D03	SAU801083
E3M10000040H09	EFA201981	E1M10000282D11	ECO103886	S1M10000025D03	SAU801084
E3M10000040A10	EFA201981	E1M10000282C12	ECO101438	S1M10000025F03	SAU802711
E3M10000040B10	EFA200457	E1M10000282E12	ECO103223	S1M10000025D04	SAU800984
E3M10000040C10	EFA200192	E1M10000282G12	ECO103186	S1M10000025E04	SAU800431
E3M10000040E10	EFA201983	E1M10000283D01	ECO100905	S1M10000025E04	SAU100580
E3M10000040A11	EFA201041	E1M10000283D01	ECO100906	S1M10000025E04	SAU100905
E3M10000040B11	EFA202110	E1M10000283E01	ECO103886	S1M10000025E04	SAU200260
E3M10000040C11	EFA200805	E1M10000283A02	ECO104049	S1M10000025E04	SAU501625
E3M10000040E11	EFA202221	E1M10000283A02	ECO104050	S1M10000025G04	SAU800760
E3M10000040F11	EFA201208	E1M10000283B02	ECO100032	S1M10000025B05	SAU802503
E3M10000040G11	EFA201984	E1M10000283H03	ECO103219	S1M10000025B05	SAU802502
E3M10000040B12	EFA201987	E1M10000283B04	ECO103219	S1M10000025C05	SAU802246
E3M10000040C12	EFA200677	E1M10000283B05	ECO103219	S1M10000025F05	SAU802586
E3M10000040D12	EFA200192	E1M10000283G05	ECO103264	S1M10000025F05	SAU802585
E3M10000040E12	EFA202007	E1M10000283G05	ECO103265	S1M10000025H05	SAU800548
E3M10000040G12	EFA202015	E1M10000283A06	ECO101259	S1M10000025B06	SAU801183
E3M10000041C01	EFA201888	E1M10000283F06	ECO100522	S1M10000025B06	SAU801182
E3M10000041B02	EFA200457	E1M10000283A07	ECO103221	S1M10000025D06	SAU801181
E3M10000041C02	EFA201208	E1M10000283G07	ECO102654	S1M10000025G06	SAU800760
E3M10000041D02	EFA200807	E1M10000283A08	ECO103881	S1M10000025H06	SAU800548
E3M10000041E02	EFA200245	E1M10000283A08	ECO103882	S1M10000025H07	SAU800111
E3M10000041G02	EFA200841	E1M10000283E08	ECO103237	S1M10000025A08	SAU801018
E3M10000041G02	EFA203246	E1M10000283F08	ECO103263	S1M10000025A08	SAU801021
E3M10000041A03	EFA201920	E1M10000283B10	ECO103227	S1M10000025A08	SAU801019
E3M10000041B03	EFA201984	E1M10000283H10	ECO103607	S1M10000025A08	SAU801020
E3M10000041D03	EFA201401	E1M10000283B11	ECO103234	S1M10000025D08	SAU800248
E3M10000041E03	EFA202007	E1M10000283B11	ECO103235	S1M10000025D08	SAU800250
E3M10000041F03	EFA202160	E1M10000283B11	ECO103236	S1M10000025D08	SAU800249
E3M10000041G03	EFA201379	E1M10000283E12	ECO103219	S1M10000025F08	SAU801321
E3M10000041C04	EFA201208	E1M10000302F01	ECO103604	S1M10000025F08	SAU801322
E3M10000041D04	EFA201028	E1M10000302G03	ECO103885	S1M10000025H08	SAU800733
E3M10000041D04	EFA201041	E1M10000302A05	ECO103559	S1M10000025H08	SAU302622
E3M10000041G04	EFA201041	E1M10000302A05	ECO103558	S1M10000025A09	SAU802154

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000041H04	EFA202180	E1M10000302C05	ECO102403	S1M10000025B09	SAU800543
E3M10000041A05	EFA200807	E1M10000302H07	ECO101096	S1M10000025C09	SAU802262
E3M10000041B05	EFA202007	E1M10000302C09	ECO100081	S1M10000025D09	SAU801476
E3M10000041D05	EFA202168	E1M10000302F10	ECO101943	S1M10000025E09	SAU801193
E3M10000041E05	EFA201983	E1M10000302H11	ECO102473	S1M10000025F09	SAU800548
E3M10000041F05	EFA200326	E1M10000303C01	ECO103886	S1M10000025A10	SAU802503
E3M10000041H05	EFA204646	E1M10000303A02	ECO101781	S1M10000025A10	SAU802502
E3M10000041B06	EFA202007	E1M10000303D02	ECO102556	S1M10000025C10	SAU800543
E3M10000041D06	EFA200457	E1M10000303A03	ECO103886	S1M10000025D10	SAU802586
E3M10000041F06	EFA200805	E1M10000303B03	ECO103220	S1M10000025D10	SAU802585
E3M10000041G06	EFA201975	E1M10000303B03	ECO103221	S1M10000025F10	SAU801517
E3M10000041H06	EFA200807	E1M10000303H03	ECO103186	S1M10000025G10	SAU801264
E3M10000041A07	EFA201869	E1M10000303F04	ECO103882	S1M10000025G10	SAU103443
E3M10000041A07	EFA201867	E1M10000303B05	ECO103181	S1M10000025H10	SAU802004
E3M10000041C07	EFA205225	E1M10000303C05	ECO103238	S1M10000025C11	SAU801193
E3M10000041E07	EFA202007	E1M10000303C05	ECO103239	S1M10000025E11	SAU800005
E3M10000041F07	EFA202003	E1M10000303C05	ECO103240	S1M10000025B12	SAU802240
E3M10000041G07	EFA200841	E1M10000303F06	ECO103881	S1M10000025F12	SAU802586
E3M10000041A08	EFA202006	E1M10000303B07	ECO103881	S1M10000025F12	SAU802585
E3M10000041B08	EFA200454	E1M10000303B07	ECO103880	S1M10000026C01	SAU802171
E3M10000041C08	EFA201869	E1M10000303F07	ECO103878	S1M10000026C01	SAU802170
E3M10000041D08	EFA201981	E1M10000303F07	ECO204942	S1M10000026E01	SAU801181
E3M10000041F08	EFA201886	E1M10000303A08	ECO103100	S1M10000026F01	SAU801096
E3M10000041G08	EFA202006	E1M10000303F08	ECO100915	S1M10000026G01	SAU801264
E3M10000041H08	EFA200192	E1M10000303D11	ECO100632	S1M10000026G01	SAU103441
E3M10000041A09	EFA202115	E1M10000303D12	ECO101868	S1M10000026G01	SAU103443
E3M10000041B09	EFA201506	E1M10000304G01	ECO103559	S1M10000026H01	SAU801900
E3M10000041B09	EFA201507	E1M10000304H02	ECO103487	S1M10000026A02	SAU800548
E3M10000041C09	EFA205288	E1M10000304A03	ECO103231	S1M10000026B02	SAU800548
E3M10000041D09	EFA201878	E1M10000304A03	ECO103232	S1M10000026H02	SAU800589
E3M10000041F09	EFA201981	E1M10000304C03	ECO103100	S1M10000026B03	SAU800547
E3M10000041G09	EFA202006	E1M10000304E03	ECO103236	S1M10000026F03	SAU802586
E3M10000041H09	EFA200358	E1M10000304E03	ECO103237	S1M10000026F03	SAU802585
E3M10000041A10	EFA200829	E1M10000304F03	ECO103185	S1M10000026F03	SAU802587
E3M10000041B10	EFA202168	E1M10000304E05	ECO103100	S1M10000026G03	SAU802249
E3M10000041C10	EFA202160	E1M10000304G05	ECO101421	S1M10000026H03	SAU802230
E3M10000041D10	EFA200677	E1M10000304A06	ECO100663	S1M10000026A04	SAU802606
E3M10000041E10	EFA202006	E1M10000304F06	ECO103237	S1M10000026D04	SAU802100
E3M10000041F10	EFA202170	E1M10000304A08	ECO101524	S1M10000026D04	SAU802099
E3M10000041F10	EFA202168	E1M10000304A08	ECO101525	S1M10000026F04	SAU800006
E3M10000041G10	EFA200179	E1M10000304B10	ECO103186	S1M10000026G04	SAU600582
E3M10000041H10	EFA201041	E1M10000305E01	ECO102827	S1M10000026H04	SAU802496
E3M10000041A11	EFA201028	E1M10000305E01	ECO102828	S1M10000026A05	SAU802448
E3M10000041A11	EFA201041	E1M10000305C02	ECO103100	S1M10000026B05	SAU801184
E3M10000041B11	EFA201982	E1M10000305G04	ECO101438	S1M10000026D05	SAU800478
E3M10000041B11	EFA201981	E1M10000305G09	ECO104037	S1M10000026F05	SAU802246
E3M10000041C11	EFA200454	E1M10000305C10	ECO100004	S1M10000026G05	SAU800545
E3M10000041D11	EFA202006	E1M10000305C10	ECO100005	S1M10000026H05	SAU800548
E3M10000041E11	EFA202013	E1M10000305B11	ECO102827	S1M10000026A06	SAU801760
E3M10000041F11	EFA202001	E1M10000305B11	ECO102828	S1M10000026B06	SAU801518
E3M10000041F11	EFA202003	E1M10000305C11	ECO102827	S1M10000026C06	SAU801084
E3M10000041H11	EFA201379	E1M10000305C11	ECO102828	S1M10000026D06	SAU802246
E3M10000041B12	EFA205255	E1M10000306C01	ECO103237	S1M10000026F06	SAU800517

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000041C12	EFA200400	E1M10000306A03	ECO102056	S1M10000026G06	SAU801096
E3M10000041D12	EFA200179	E1M10000306G03	ECO103528	S1M10000026A07	SAU800984
E3M10000041G12	EFA200179	E1M10000306E04	ECO103243	S1M10000026B07	SAU801701
E3M10000042B01	EFA202274	E1M10000306E04	ECO103244	S1M10000026B07	SAU801700
E3M10000042D01	EFA201920	E1M10000306H04	ECO103116	S1M10000026C07	SAU801392
E3M10000042G01	EFA201985	E1M10000306C05	ECO103884	S1M10000026D07	SAU802217
E3M10000042A02	EFA204122	E1M10000306C05	ECO103885	S1M10000026F07	SAU801264
E3M10000042A02	EFA203071	E1M10000306H07	ECO100905	S1M10000026F07	SAU103441
E3M10000042B02	EFA201208	E1M10000306D09	ECO103218	S1M10000026F07	SAU103443
E3M10000042C02	EFA201457	E1M10000306H09	ECO103230	S1M10000026G07	SAU801355
E3M10000042D02	EFA200805	E1M10000306E11	ECO103233	S1M10000026H07	SAU802225
E3M10000042A03	EFA201878	E1M10000307G01	ECO103911	S1M10000026H07	SAU802224
E3M10000042A03	EFA201869	E1M10000307C02	ECO100549	S1M10000026A08	SAU802171
E3M10000042C03	EFA200677	E1M10000307D02	ECO103221	S1M10000026A08	SAU802170
E3M10000042D03	EFA200179	E1M10000307E03	ECO101403	S1M10000026C08	SAU802246
E3M10000042B04	EFA200661	E1M10000307E03	ECO205169	S1M10000026D08	SAU600582
E3M10000042C04	EFA200457	E1M10000307B04	ECO100757	S1M10000026F08	SAU800545
E3M10000042E05	EFA200805	E1M10000307C04	ECO102817	S1M10000026G08	SAU802654
E3M10000042G05	EFA201041	E1M10000307E04	ECO103482	S1M10000026A09	SAU800018
E3M10000042D06	EFA202007	E1M10000307B05	ECO103886	S1M10000026A09	SAU800019
E3M10000042H06	EFA200247	E1M10000307C05	ECO103001	S1M10000026E09	SAU800525
E3M10000042H06	EFA200246	E1M10000307D05	ECO103242	S1M10000026E09	SAU800524
E3M10000042G07	EFA201826	E1M10000307E05	ECO103881	S1M10000026G09	SAU800996
E3M10000042A08	EFA202180	E1M10000307F05	ECO103160	S1M10000026H09	SAU802496
E3M10000042B08	EFA201981	E1M10000307A06	ECO103878	S1M10000026A10	SAU800984
E3M10000042G08	EFA200677	E1M10000307A06	ECO204942	S1M10000026B10	SAU800391
E3M10000042H08	EFA201878	E1M10000307F06	ECO103242	S1M10000026D10	SAU800170
E3M10000042B09	EFA200245	E1M10000307F06	ECO103243	S1M10000026E10	SAU801264
E3M10000042D09	EFA200841	E1M10000307H06	ECO103886	S1M10000026E10	SAU103441
E3M10000042A10	EFA201869	E1M10000307B07	ECO101232	S1M10000026E10	SAU103443
E3M10000042A10	EFA201867	E1M10000307B07	ECO101233	S1M10000026F10	SAU801264
E3M10000042B10	EFA201869	E1M10000307C07	ECO103461	S1M10000026F10	SAU103441
E3M10000042C10	EFA201888	E1M10000307G07	ECO103160	S1M10000026F10	SAU103443
E3M10000042C10	EFA201886	E1M10000307F08	ECO103116	S1M10000026G10	SAU801235
E3M10000042E10	EFA204122	E1M10000307C09	ECO103231	S1M10000026G10	SAU801236
E3M10000042E10	EFA203071	E1M10000307C09	ECO103232	S1M10000026H10	SAU800322
E3M10000042B11	EFA201993	E1M10000307A10	ECO103559	S1M10000026A11	SAU802192
E3M10000042D11	EFA201985	E1M10000307A10	ECO103558	S1M10000026A11	SAU802191
E3M10000042F11	EFA200310	E1M10000307E10	ECO103878	S1M10000026A11	SAU802190
E3M10000042G11	EFA201878	E1M10000307E10	ECO204942	S1M10000026B11	SAU800526
E3M10000042G11	EFA201869	E1M10000307F10	ECO100725	S1M10000026C11	SAU801185
E3M10000042H11	EFA201208	E1M10000307H10	ECO102870	S1M10000026E11	SAU802240
E3M10000042D12	EFA201165	E1M10000307A11	ECO104093	S1M10000026E11	SAU802239
E3M10000042D12	EFA201163	E1M10000307D11	ECO102306	S1M10000026B12	SAU800984
E3M10000042E12	EFA202180	E1M10000307G11	ECO100095	S1M10000026C12	SAU800491
E3M10000042F12	EFA204122	E1M10000307C12	ECO100095	S1M10000026D12	SAU802250
E3M10000042F12	EFA203071	E1M10000307E12	ECO100716	S1M10000026E12	SAU801644
E3M10000042G12	EFA200805	E1M10000307G12	ECO102639	S1M10000026F12	SAU800517
E3M10000043B01	EFA201888	E1M10000308C01	ECO103237	S1M10000026G12	SAU800842
E3M10000043C01	EFA200457	E1M10000308A02	ECO103221	S1M10000027G01	SAU800453
E3M10000043D01	EFA201981	E1M10000308B02	ECO102636	S1M10000027G01	SAU200237
E3M10000043A02	EFA200247	E1M10000308F02	ECO103558	S1M10000027C02	SAU801426
E3M10000043B02	EFA201869	E1M10000308H04	ECO101613	S1M10000027D02	SAU801900

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000043D02	EFA200807	E1M10000308H04	ECO101614	S1M10000027D02	SAU801899
E3M10000043H02	EFA201984	E1M10000308B05	ECO104010	S1M10000027E02	SAU802090
E3M10000043A03	EFA201984	E1M10000308E05	ECO101669	S1M10000027F02	SAU800478
E3M10000043B03	EFA200840	E1M10000308F06	ECO103243	S1M10000027H02	SAU801760
E3M10000043E03	EFA200478	E1M10000308F06	ECO103244	S1M10000027D03	SAU800537
E3M10000043F03	EFA200454	E1M10000308B07	ECO101684	S1M10000027E03	SAU800453
E3M10000043G03	EFA200807	E1M10000308B07	ECO101685	S1M10000027E03	SAU200237
E3M10000043F04	EFA200326	E1M10000308C07	ECO103263	S1M10000027G03	SAU800545
E3M10000043G04	EFA200807	E1M10000308A08	ECO102274	S1M10000027A04	SAU800545
E3M10000043A05	EFA200807	E1M10000308C08	ECO100094	S1M10000027C04	SAU801018
E3M10000043G05	EFA200192	E1M10000308C08	ECO100095	S1M10000027G04	SAU801089
E3M10000043H05	EFA202168	E1M10000308D08	ECO103263	S1M10000027H04	SAU801089
E3M10000043B06	EFA202274	E1M10000308G09	ECO100886	S1M10000027A05	SAU802226
E3M10000043F06	EFA201920	E1M10000308H09	ECO103221	S1M10000027C05	SAU801193
E3M10000043H06	EFA204122	E1M10000308E10	ECO100886	S1M10000027D05	SAU800845
E3M10000043H06	EFA203071	E1M10000286D01	ECO103218	S1M10000027E05	SAU802502
E3M10000043E07	EFA200747	E1M10000286B02	ECO103230	S1M10000027F05	SAU802124
E3M10000043G07	EFA200195	E1M10000286B02	ECO103231	S1M10000027F05	SAU103735
E3M10000043A08	EFA201460	E1M10000286G02	ECO101347	S1M10000027G05	SAU802442
E3M10000043B08	EFA200733	E1M10000286G02	ECO101348	S1M10000027H05	SAU802442
E3M10000043C08	EFA201985	E1M10000286H02	ECO103244	S1M10000027B06	SAU801256
E3M10000043E08	EFA200381	E1M10000286A03	ECO102834	S1M10000027C06	SAU801011
E3M10000043E08	EFA200382	E1M10000286C03	ECO103218	S1M10000027D06	SAU801781
E3M10000043F08	EFA201869	E1M10000286C04	ECO100868	S1M10000027E06	SAU600582
E3M10000043G08	EFA202168	E1M10000286E04	ECO102654	S1M10000027F06	SAU600582
E3M10000043H08	EFA201920	E1M10000286C05	ECO103104	S1M10000027G06	SAU801781
E3M10000043A09	EFA201984	E1M10000286D05	ECO100584	S1M10000027H06	SAU600582
E3M10000043A09	EFA201983	E1M10000286E05	ECO103559	S1M10000027B07	SAU800547
E3M10000043C09	EFA201888	E1M10000286E05	ECO103558	S1M10000027D07	SAU800453
E3M10000043D09	EFA202180	E1M10000286E05	ECO103557	S1M10000027D07	SAU200237
E3M10000043H09	EFA200326	E1M10000286F05	ECO101259	S1M10000027E07	SAU802249
E3M10000043A10	EFA202168	E1M10000286H05	ECO104160	S1M10000027G07	SAU802186
E3M10000043B10	EFA200457	E1M10000286A06	ECO103217	S1M10000027H07	SAU800996
E3M10000043C10	EFA200797	E1M10000286A06	ECO103218	S1M10000027A08	SAU801084
E3M10000043D10	EFA200381	E1M10000286G06	ECO103219	S1M10000027B08	SAU802224
E3M10000043D10	EFA200382	E1M10000286F07	ECO103242	S1M10000027C08	SAU802224
E3M10000043E10	EFA200457	E1M10000286F07	ECO103243	S1M10000027D08	SAU801663
E3M10000043F10	EFA202003	E1M10000286B08	ECO102274	S1M10000027E08	SAU800006
E3M10000043G10	EFA200310	E1M10000286F08	ECO100381	S1M10000027F08	SAU801186
E3M10000043A11	EFA200326	E1M10000286H08	ECO102259	S1M10000027G08	SAU802654
E3M10000043B11	EFA202006	E1M10000286D09	ECO103886	S1M10000027H08	SAU800006
E3M10000043E11	EFA202213	E1M10000286F09	ECO103263	S1M10000027B09	SAU801760
E3M10000043G11	EFA202168	E1M10000286A10	ECO102096	S1M10000027C09	SAU801183
E3M10000043H11	EFA200454	E1M10000286F10	ECO103160	S1M10000027D09	SAU802335
E3M10000043B12	EFA201888	E1M10000286F10	ECO103161	S1M10000027E09	SAU802224
E3M10000043D12	EFA200807	E1M10000286A11	ECO103886	S1M10000027F09	SAU802071
E3M10000043F12	EFA202168	E1M10000286C11	ECO103240	S1M10000027G09	SAU802224
E3M10000043G12	EFA201869	E1M10000286E12	ECO101403	S1M10000027H09	SAU800513
E3M10000044E01	EFA202007	E1M10000286E12	ECO205169	S1M10000027D10	SAU801241
E3M10000044C02	EFA201974	E1M10000287B02	ECO103882	S1M10000027H10	SAU800547
E3M10000045E07	EFA202003	E1M10000287D02	ECO103227	S1M10000027A11	SAU800842
E3M10000046C04	EFA200805	E1M10000287D02	ECO103228	S1M10000027B11	SAU801905
E3M10000047D02	EFA200805	E1M10000287F02	ECO103265	S1M10000027D11	SAU800528

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000047B08	EFA201999	E1M10000287E03	ECO103240	S1M10000027E11	SAU800842
E3M10000047C08	EFA201087	E1M10000287E03	ECO103241	S1M10000027G11	SAU802565
E3M10000047D08	EFA200805	E1M10000287A04	ECO102556	S1M10000027G11	SAU802564
E3M10000050B01	EFA201869	E1M10000287B05	ECO102033	S1M10000027H11	SAU802565
E3M10000050C01	EFA202211	E1M10000287C05	ECO103242	S1M10000027H11	SAU802564
E3M10000050D01	EFA201888	E1M10000287C05	ECO103243	S1M10000028B01	SAU801770
E3M10000050B02	EFA202168	E1M10000287E05	ECO302213	S1M10000028B01	SAU801769
E3M10000050C02	EFA202168	E1M10000287G05	ECO102193	S1M10000028E01	SAU800738
E3M10000050E02	EFA200807	E1M10000287H05	ECO103886	S1M10000028E01	SAU800737
E3M10000050F02	EFA200677	E1M10000287A06	ECO102741	S1M10000028F01	SAU801770
E3M10000050H04	EFA201981	E1M10000287C06	ECO103223	S1M10000028F01	SAU801769
E3M10000050B05	EFA202274	E1M10000287A07	ECO103885	S1M10000028G01	SAU802545
E3M10000050D05	EFA201985	E1M10000287A09	ECO100185	S1M10000028A02	SAU801770
E3M10000050D05	EFA202953	E1M10000287A10	ECO103237	S1M10000028A02	SAU801769
E3M10000050E05	EFA202007	E1M10000287A10	ECO103238	S1M10000028B02	SAU800490
E3M10000050G05	EFA201645	E1M10000287C10	ECO101977	S1M10000028C02	SAU800170
E3M10000050G05	EFA201646	E1M10000287C10	ECO101978	S1M10000028G02	SAU801018
E3M10000050H05	EFA202012	E1M10000287B11	ECO101259	S1M10000028B03	SAU801354
E3M10000050A06	EFA200807	E1M10000287F11	ECO102555	S1M10000028D03	SAU802654
E3M10000050C06	EFA200805	E1M10000287F11	ECO102556	S1M10000028E03	SAU800509
E3M10000050D06	EFA202160	E1M10000287G12	ECO101334	S1M10000028F03	SAU800517
E3M10000050F06	EFA201888	E1M10000288B02	ECO103886	S1M10000028G03	SAU800641
E3M10000050H06	EFA200366	E1M10000288D02	ECO104091	S1M10000028H03	SAU802217
E3M10000050A07	EFA201981	E1M10000288D02	ECO104092	S1M10000028A04	SAU800753
E3M10000050B07	EFA201981	E1M10000288H02	ECO103886	S1M10000028B04	SAU801683
E3M10000050C07	EFA200590	E1M10000288A03	ECO103594	S1M10000028C04	SAU800512
E3M10000050E07	EFA201926	E1M10000288B03	ECO101939	S1M10000028D04	SAU800512
E3M10000050F07	EFA202170	E1M10000288F03	ECO101940	S1M10000028E04	SAU800424
E3M10000050H07	EFA200192	E1M10000288C04	ECO102556	S1M10000028F04	SAU800535
E3M10000050B08	EFA200916	E1M10000288D04	ECO100885	S1M10000028F04	SAU800534
E3M10000050D08	EFA202007	E1M10000288A05	ECO100706	S1M10000028G04	SAU802502
E3M10000050F08	EFA200457	E1M10000288H05	ECO104227	S1M10000028B05	SAU801264
E3M10000050G08	EFA200731	E1M10000288H05	ECO205289	S1M10000028C05	SAU802207
E3M10000050D09	EFA201878	E1M10000288A06	ECO102999	S1M10000028C05	SAU802206
E3M10000050F09	EFA201985	E1M10000288G06	ECO100194	S1M10000028D05	SAU800424
E3M10000050G09	EFA202007	E1M10000288G06	ECO100195	S1M10000028F05	SAU800535
E3M10000050H09	EFA202180	E1M10000288C07	ECO103221	S1M10000028F05	SAU800534
E3M10000050B10	EFA201869	E1M10000288G07	ECO103626	S1M10000028H05	SAU801264
E3M10000051C01	EFA200677	E1M10000288G07	ECO103627	S1M10000028A06	SAU801458
E3M10000051D01	EFA201884	E1M10000288E08	ECO103227	S1M10000028A06	SAU801457
E3M10000051C03	EFA202168	E1M10000288D09	ECO100663	S1M10000028B06	SAU801741
E3M10000051D03	EFA201888	E1M10000288E09	ECO103885	S1M10000028C06	SAU802654
E3M10000051H03	EFA202006	E1M10000288E10	ECO103263	S1M10000028D06	SAU801186
E3M10000051A04	EFA201999	E1M10000288F11	ECO103886	S1M10000028F06	SAU800539
E3M10000051B04	EFA200400	E1M10000288H11	ECO102637	S1M10000028G06	SAU801260
E3M10000051B04	EFA202608	E1M10000288D12	ECO103224	S1M10000028D07	SAU801139
E3M10000051D04	EFA201993	E1M10000288D12	ECO103225	S1M10000028F07	SAU802254
E3M10000051E04	EFA200290	E1M10000289D01	ECO103237	S1M10000028H07	SAU802654
E3M10000051F04	EFA200841	E1M10000289D01	ECO103238	S1M10000028A08	SAU800354
E3M10000051F05	EFA202160	E1M10000289F01	ECO100905	S1M10000028B08	SAU800547
E3M10000051C06	EFA200247	E1M10000289G01	ECO103231	S1M10000028C08	SAU800542
E3M10000051D06	EFA200247	E1M10000289G05	ECO103878	S1M10000028D08	SAU802071
E3M10000051F06	EFA204122	E1M10000289G05	ECO204942	S1M10000028E08	SAU801260

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000051F06	EFA203071	E1M10000289B06	ECO103883	S1M10000028G08	SAU801701
E3M10000051G06	EFA200247	E1M10000289D06	ECO104213	S1M10000028G08	SAU801700
E3M10000051B07	EFA201208	E1M10000289G06	ECO100785	S1M10000028H08	SAU801646
E3M10000051E07	EFA202378	E1M10000289G06	ECO100786	S1M10000028H08	SAU801645
E3M10000051F07	EFA201970	E1M10000289E07	ECO100095	S1M10000028B09	SAU800547
E3M10000051F07	EFA201968	E1M10000289G07	ECO103451	S1M10000028D09	SAU800547
E3M10000051A08	EFA200677	E1M10000289A08	ECO104091	S1M10000029F01	SAU802228
E3M10000051B08	EFA201985	E1M10000289A08	ECO104092	S1M10000029F01	SAU802227
E3M10000051B08	EFA202953	E1M10000289A08	ECO104093	S1M10000029G01	SAU800542
E3M10000051D08	EFA201312	E1M10000289H08	ECO103831	S1M10000029H01	SAU800517
E3M10000051H08	EFA201888	E1M10000289D09	ECO103885	S1M10000029A02	SAU801354
E3M10000051B09	EFA201954	E1M10000289C10	ECO103885	S1M10000029B02	SAU800543
E3M10000051C09	EFA200266	E1M10000289G10	ECO100725	S1M10000029C02	SAU801139
E3M10000051D09	EFA200247	E1M10000289B11	ECO103236	S1M10000029D02	SAU801275
E3M10000051D09	EFA200246	E1M10000289B11	ECO103237	S1M10000029E02	SAU801275
E3M10000051E09	EFA200246	E1M10000289G11	ECO102300	S1M10000029F02	SAU801139
E3M10000051G09	EFA202378	E1M10000289E12	ECO104091	S1M10000029G02	SAU800605
E3M10000051H09	EFA200538	E1M10000289E12	ECO104092	S1M10000029G02	SAU302812
E3M10000051A10	EFA201999	E1M10000290B01	ECO101067	S1M10000029A03	SAU802240
E3M10000051B10	EFA202110	E1M10000290B01	ECO101068	S1M10000029B03	SAU802491
E3M10000051D10	EFA202006	E1M10000290G01	ECO103886	S1M10000029C03	SAU600582
E3M10000051E10	EFA202160	E1M10000290A02	ECO101067	S1M10000029G03	SAU800006
E3M10000051F10	EFA202160	E1M10000290A02	ECO101068	S1M10000029A04	SAU801596
E3M10000051H10	EFA200421	E1M10000290B02	ECO102599	S1M10000029A04	SAU801597
E3M10000051A11	EFA202160	E1M10000290B02	ECO102600	S1M10000029B04	SAU802599
E3M10000051D11	EFA202211	E1M10000290E02	ECO101939	S1M10000029F04	SAU802649
E3M10000051E11	EFA201827	E1M10000290F04	ECO103226	S1M10000029G04	SAU802654
E3M10000051F11	EFA200179	E1M10000290F05	ECO103218	S1M10000029B05	SAU801362
E3M10000051G11	EFA201982	E1M10000290D06	ECO103559	S1M10000029C05	SAU800543
E3M10000051F12	EFA200805	E1M10000290D06	ECO103560	S1M10000029D05	SAU801354
E3M10000050E01	EFA200457	E1M10000290D08	ECO103064	S1M10000029E05	SAU801476
E3M10000050G01	EFA200179	E1M10000290E08	ECO102555	S1M10000029G05	SAU801253
E3M10000050B03	EFA202170	E1M10000290E08	ECO102556	S1M10000029H05	SAU800259
E3M10000050B03	EFA202168	E1M10000290F08	ECO102555	S1M10000029B06	SAU800006
E3M10000050C03	EFA200381	E1M10000290F08	ECO102556	S1M10000029H06	SAU800543
E3M10000050C03	EFA200382	E1M10000290B09	ECO102555	S1M10000029C07	SAU800759
E3M10000050D03	EFA200400	E1M10000290B09	ECO102556	S1M10000029G07	SAU800605
E3M10000050D03	EFA202608	E1M10000290D10	ECO103228	S1M10000029B08	SAU801621
E3M10000050E03	EFA200400	E1M10000290E11	ECO104090	S1M10000029G08	SAU801618
E3M10000050E03	EFA202608	E1M10000290E11	ECO104091	S1M10000029H08	SAU801139
E3M10000050A04	EFA202160	E1M10000291E01	ECO102852	S1M10000029A09	SAU801113
E3M10000050E04	EFA205285	E1M10000291B02	ECO103262	S1M10000029C09	SAU801113
E3M10000050E04	EFA201999	E1M10000291B02	ECO103878	S1M10000029D09	SAU801113
E3M10000050H08	EFA205288	E1M10000291B02	ECO204942	S1M10000029F09	SAU802262
E3M10000052C01	EFA202110	E1M10000291F02	ECO102051	S1M10000029H09	SAU801618
E3M10000052F01	EFA200457	E1M10000291A03	ECO103237	S1M10000029A10	SAU800517
E3M10000052C02	EFA200805	E1M10000291A03	ECO103238	S1M10000029A10	SAU202623
E3M10000052D02	EFA202170	E1M10000291B04	ECO103237	S1M10000029B10	SAU801790
E3M10000052G02	EFA200457	E1M10000291B04	ECO103238	S1M10000029C10	SAU800529
E3M10000052B03	EFA200239	E1M10000291E04	ECO100967	S1M10000029D10	SAU801790
E3M10000052E03	EFA202378	E1M10000291E05	ECO103223	S1M10000029E10	SAU801139
E3M10000052G03	EFA200326	E1M10000291G05	ECO102555	S1M10000029F10	SAU800266
E3M10000052B04	EFA200290	E1M10000291G05	ECO102556	S1M10000029H10	SAU801139

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E3M10000052F04	EFA200310	E1M10000291A06	ECO103506	S1M10000029A11	SAU801263
E3M10000052G04	EFA200192	E1M10000291B06	ECO104090	S1M10000029E11	SAU801139
E3M10000052G04	EFA200198	E1M10000291C06	ECO103461	S1M10000029F11	SAU802714
E3M10000052C05	EFA200454	E1M10000291D06	ECO100102	S1M10000029A12	SAU801631
E3M10000052D05	EFA201888	E1M10000291E07	ECO103866	S1M10000029C12	SAU802070
E3M10000052F05	EFA202168	E1M10000291A08	ECO101221	S1M10000029D12	SAU801552
E3M10000052G05	EFA201926	E1M10000291B08	ECO103217	S1M10000029F12	SAU800253
E3M10000052G06	EFA202274	E1M10000291B08	ECO103218	S1M10000029F12	SAU800257
E3M10000052H06	EFA200805	E1M10000291F08	ECO103229	S1M10000029G12	SAU801138
E3M10000052B07	EFA202168	E1M10000291B10	ECO103881	S1M10000030B01	SAU802654
E3M10000052F08	EFA202378	E1M10000291E10	ECO101591	S1M10000030D01	SAU801113
E3M10000052E09	EFA201985	E1M10000291D11	ECO103263	S1M10000030F01	SAU801473
E3M10000052E09	EFA202953	E1M10000291F11	ECO100095	S1M10000030H01	SAU800543
E3M10000052G09	EFA200326	E1M10000291G11	ECO103264	S1M10000030A02	SAU801181
E3M10000052F10	EFA200239	E1M10000291G11	ECO103265	S1M10000030B02	SAU801515
E3M10000052F10	EFA200240	E1M10000291H11	ECO103262	S1M10000030C02	SAU802567
E3M10000052D11	EFA200898	E1M10000291H11	ECO103878	S1M10000030D02	SAU801515
E3M10000052D12	EFA202168	E1M10000291H11	ECO204942	S1M10000030E02	SAU801473
1008-H20	ECO100023	E1M10000291B12	ECO103882	S1M10000030H02	SAU802452
1011-P20	ECO100702	E1M10000291F12	ECO103243	S1M10000030B03	SAU802654
1053-37	ECO101256	E1M10000293B01	ECO103885	S1M10000030C03	SAU800275
1053-37	ECO202228	E1M10000293B02	ECO104093	S1M10000030D03	SAU801473
1010-C11	ECO101324	E1M10000293G02	ECO103886	S1M10000030G03	SAU800542
1017-H1	ECO304472	E1M10000293A04	ECO100402	S1M10000030H03	SAU800232
1067-16	ECO102309	E1M10000293B04	ECO103886	S1M10000030C04	SAU800526
1083-27	ECO102636	E1M10000293A05	ECO100095	S1M10000030A05	SAU800478
1065-12	ECO102557	E1M10000293E05	ECO103223	S1M10000030B05	SAU801256
221-41	ECO103884	E1M10000293E05	ECO103224	S1M10000030C05	SAU800526
B17-6.O10	ECO103884	E1M10000293G05	ECO103243	S1M10000030D05	SAU800759
910-B20	ECO103884	E1M10000293A06	ECO101175	S1M10000030D05	SAU302793
B18-2.N21	ECO100148	E1M10000293H06	ECO102654	S1M10000030G05	SAU800776
971-B20	ECO103240	E1M10000293F07	ECO101095	S1M10000030G05	SAU800777
971-B20	ECO103241	E1M10000293C08	ECO101844	S1M10000030H05	SAU800179
D1-1.A15	ECO103394	E1M10000293E08	ECO101939	S1M10000030D06	SAU800189
4-28.1	ECO101485	E1M10000293G08	ECO103101	S1M10000030E06	SAU801257
D1-2.B13	ECO102255	E1M10000293B09	ECO103181	S1M10000030B07	SAU802627
D1-2.P21	ECO102144	E1M10000293G09	ECO102144	S1M10000030D07	SAU800189
Z56-D2	ECO103911	E1M10000293H09	ECO100094	S1M10000030G07	SAU802247
PJMF55	ECO103264	E1M10000293H09	ECO100095	S1M10000030H07	SAU800525
PJMF55	ECO103265	E1M10000293A11	ECO103883	S1M10000030C08	SAU801831
R1-15.A13	ECO101995	E1M10000293E11	ECO103242	S1M10000030F08	SAU802231
R1-19.H1	ECO101104	E1M10000293F11	ECO104091	S1M10000030F08	SAU802230
R1-55.M2	ECO103884	E1M10000293F11	ECO104092	S1M10000030G08	SAU802250
Z45-F11	ECO103263	E1M10000293C12	ECO100170	S1M10000030A09	SAU801719
Z8-B9	ECO102033	E1M10000293D12	ECO103221	S1M10000030B09	SAU802654
E1M10000007B04	ECO102986	E1M10000295D01	ECO103228	S1M10000030C09	SAU800542
227-10	ECO102562	E1M10000295D01	ECO103229	S1M10000030D09	SAU801139
709-F23	ECO101506	E1M10000295G01	ECO103532	S1M10000030F09	SAU801904
801-C15	ECO100488	E1M10000295G01	ECO103533	S1M10000030G09	SAU800542
801-C15	ECO100490	E1M10000295B02	ECO101635	S1M10000030H09	SAU801644
801-C15	ECO100491	E1M10000295E02	ECO103217	S1M10000030A10	SAU802309
801-H19	ECO100488	E1M10000295E02	ECO103218	S1M10000030A10	SAU802308
801-H19	ECO100490	E1M10000295F02	ECO100169	S1M10000030C10	SAU800562

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
801-H19	ECO100491	E1M10000295H04	ECO100663	S1M10000030D10	SAU802601
804-P6	ECO102513	E1M10000295A07	ECO100712	S1M10000030F10	SAU800019
807-D20	ECO100366	E1M10000295B07	ECO100179	S1M10000030G10	SAU800019
807-D20	ECO100367	E1M10000295B07	ECO100180	S1M10000030H10	SAU802654
B13-17.G8	ECO101111	E1M10000295C07	ECO103224	S1M10000030A11	SAU800517
B5-6.C8	ECO101475	E1M10000295C07	ECO103225	S1M10000030A11	SAU202623
B5-6.C8	ECO101476	E1M10000295C07	ECO103226	S1M10000030D11	SAU800517
B5-6.C8	ECO201962	E1M10000295D08	ECO103225	S1M10000030D11	SAU202623
B8-2.D9	ECO103461	E1M10000295D08	ECO103226	S1M10000030E11	SAU802241
B15-8.P13	ECO101328	E1M10000295F08	ECO103160	S1M10000030G11	SAU800811
B15-8.P13	ECO101329	E1M10000295G08	ECO103217	S1M10000030C12	SAU801647
T13-5.A2	ECO103059	E1M10000295G08	ECO103218	S1M10000030C12	SAU801646
T12-3.I11	ECO102857	E1M10000295B09	ECO103236	S1M10000030E12	SAU800537
T20-15.D4	ECO101475	E1M10000295F09	ECO103881	S1M10000030G12	SAU801526
T20-15.D4	ECO101476	E1M10000295F09	ECO103882	S1M10000031B01	SAU802240
T20-15.D4	ECO201962	E1M10000295G09	ECO103263	S1M10000031H01	SAU800023
T24-15.G6	ECO103059	E1M10000295D10	ECO103101	S1M10000031B02	SAU802247
T24-17.C6	ECO102857	E1M10000295H10	ECO103263	S1M10000031E02	SAU801912
244.B12	ECO101763	E1M10000295B11	ECO103229	S1M10000031F02	SAU802231
244.B12	ECO101764	E1M10000295F11	ECO100954	S1M10000031F02	SAU802230
244.B12	ECO101765	E1M10000295G12	ECO103494	S1M10000031G02	SAU802235
1042-J1	ECO100702	E1M10000312D11	ECO104091	S1M10000031G02	SAU802234
1042-J1	ECO100703	E1M10000312D11	ECO104092	S1M10000031H02	SAU801355
195.F5	ECO102842	E1M10000296B01	ECO102304	S1M10000031A03	SAU802250
25.D5	ECO103059	E1M10000296C02	ECO102466	S1M10000031E03	SAU801134
25.D6	ECO103059	E1M10000296C02	ECO102467	S1M10000031E03	SAU801135
177.F3	ECO102309	E1M10000296D02	ECO103235	S1M10000031F03	SAU802240
525.H11	ECO102857	E1M10000296D02	ECO103236	S1M10000031G03	SAU801505
632.N2	ECO104277	E1M10000296D02	ECO103237	S1M10000031A04	SAU801434
633.B7	ECO103479	E1M10000296H02	ECO102556	S1M10000031A04	SAU302892
671.I20	ECO103478	E1M10000296C03	ECO100150	S1M10000031B04	SAU800543
676.B12	ECO103479	E1M10000296C03	ECO100151	S1M10000031C04	SAU800738
643.B19	ECO100702	E1M10000296E03	ECO101086	S1M10000031C04	SAU800737
720.O16	ECO103884	E1M10000296H03	ECO103227	S1M10000031E04	SAU800542
666.H12	ECO103478	E1M10000296H03	ECO103228	S1M10000031F04	SAU801517
666.H12	ECO103479	E1M10000296D04	ECO103237	S1M10000031F04	SAU801516
98.D4	ECO103263	E1M10000296G04	ECO102144	S1M10000031G04	SAU302611
844.B21	ECO102144	E1M10000296F05	ECO103886	S1M10000031G04	SAU302882
P31-25-F3	ECO101686	E1M10000296G05	ECO101467	S1M10000031F05	SAU800548
P335-8.H8	ECO101041	E1M10000296H05	ECO103094	S1M10000031D06	SAU801526
P347.2	ECO101086	E1M10000296A06	ECO100194	S1M10000031G06	SAU800548
P31-11-J20	ECO103228	E1M10000296A06	ECO100195	S1M10000031H06	SAU600582
P336-14.F20	ECO101370	E1M10000296G07	ECO102827	S1M10000031C07	SAU801760
P31-27-M1	ECO103423	E1M10000296G07	ECO102828	S1M10000031D07	SAU801181
P338-4.M21	ECO100139	E1M10000296H07	ECO103220	S1M10000031E07	SAU800016
P334-8.L7	ECO101256	E1M10000296H07	ECO103221	S1M10000031A08	SAU802365
P31-2-E16	ECO101686	E1M10000296E08	ECO100886	S1M10000031D08	SAU801790
P335-3.J14	ECO100523	E1M10000296F08	ECO103218	S1M10000031E08	SAU800547
P334-5.H2	ECO100139	E1M10000296G08	ECO103734	S1M10000031F08	SAU801264
P31-33-N2	ECO103241	E1M10000296H08	ECO100809	S1M10000031C09	SAU801193
P332-11.C20	ECO102827	E1M10000296H08	ECO100810	S1M10000031D09	SAU800019
P332-11.C20	ECO102828	E1M10000296A09	ECO100194	S1M10000031G09	SAU800006
869.A23	ECO100390	E1M10000296B11	ECO103229	S1M10000031H09	SAU801599

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
P317-2.A3	ECO101932	E1M10000296B11	ECO103230	S1M10000031A10	SAU800772
P326-9.K2	ECO103292	E1M10000296E11	ECO101684	S1M10000031C10	SAU802654
P326-9.K2	ECO103293	E1M10000296F12	ECO101684	S1M10000031E10	SAU800001
P323-8.P1	ECO101685	E1M10000296G12	ECO100095	S1M10000031F10	SAU800244
P35-8	ECO103692	E1M10000298C01	ECO101438	S1M10000031G10	SAU800962
P36-13.E2	ECO103059	E1M10000298G01	ECO104148	S1M10000031A11	SAU801741
P38-1.G20	ECO102227	E1M10000298G01	ECO104149	S1M10000031B11	SAU801908
P327-50.M10	ECO103242	E1M10000298G02	ECO102636	S1M10000031C11	SAU802152
P327-50.M10	ECO103243	E1M10000298C03	ECO103238	S1M10000031F11	SAU800312
P328-8.D21	ECO103240	E1M10000298C03	ECO103239	S1M10000031G11	SAU801234
P328-8.D21	ECO103241	E1M10000298D03	ECO103886	S1M10000031H11	SAU800962
P328-20.P20	ECO100541	E1M10000298H03	ECO103262	S1M10000031B12	SAU801621
P33-1.C22	ECO103227	E1M10000298H03	ECO103878	S1M10000031C12	SAU801741
X3S107-17	ECO101475	E1M10000298H03	ECO204942	S1M10000031E12	SAU801275
X3S107-17	ECO101476	E1M10000298E04	ECO100430	S1M10000031F12	SAU800244
X3S107-17	ECO201962	E1M10000298E04	ECO100431	S1M10000032B01	SAU802654
P35-7	ECO103928	E1M10000298H04	ECO100809	S1M10000032C01	SAU800548
X3S118-9	ECO103263	E1M10000298H04	ECO100808	S1M10000032F01	SAU800525
X3S163-1	ECO103423	E1M10000298C05	ECO103234	S1M10000032F01	SAU800524
X3S204-7	ECO103238	E1M10000298C05	ECO103235	S1M10000032H01	SAU802112
X3S177-4	ECO101161	E1M10000298C05	ECO103236	S1M10000032H01	SAU802111
P342-3	ECO102104	E1M10000298D05	ECO101539	S1M10000032E02	SAU801096
SC21.1	ECO103224	E1M10000298D05	ECO101540	S1M10000032G02	SAU800830
SC17.1	ECO102087	E1M10000298C06	ECO101844	S1M10000032G02	SAU800829
SC13.1	ECO101347	E1M10000298D06	ECO103886	S1M10000032A03	SAU802686
SC13.1	ECO101348	E1M10000298G06	ECO100096	S1M10000032C03	SAU800771
MC9.6	ECO102929	E1M10000298B07	ECO100095	S1M10000032D03	SAU801235
MC9.6	ECO102928	E1M10000298C07	ECO102638	S1M10000032E03	SAU802240
Z60-P16	ECO103243	E1M10000298G07	ECO103233	S1M10000032G03	SAU801269
Z86-I21	ECO103884	E1M10000298G07	ECO103234	S1M10000032C04	SAU800771
E1M10000109A02	ECO104168	E1M10000298B09	ECO103244	S1M10000032E04	SAU801526
E1M10000109A11	ECO102588	E1M10000298B09	ECO103245	S1M10000032F04	SAU801139
E1M10000101F05	ECO102255	E1M10000298B09	ECO103246	S1M10000032G04	SAU801703
E1M10000101D06	ECO102556	E1M10000298D09	ECO101995	S1M10000032H04	SAU801263
E1M10000101D06	ECO102557	E1M10000298D11	ECO103001	S1M10000032A05	SAU801256
E1M10000101A07	ECO100500	E1M10000298F11	ECO102462	S1M10000032B05	SAU800255
E1M10000101A07	ECO100501	E1M10000298F11	ECO102463	S1M10000032B05	SAU800256
E1M10000101H07	ECO104010	E1M10000311F01	ECO101259	S1M10000032C05	SAU800453
E1M10000101H09	ECO103230	E1M10000311F01	ECO101258	S1M10000032F05	SAU802076
E1M10000101H09	ECO103231	E1M10000311C02	ECO103226	S1M10000032H05	SAU103752
E1M10000101C12	ECO103217	E1M10000311E02	ECO103097	S1M10000032A06	SAU801738
E1M10000103B04	ECO101324	E1M10000311E02	ECO103098	S1M10000032D06	SAU801900
E1M10000103D11	ECO103217	E1M10000311A03	ECO103100	S1M10000032E06	SAU801181
E1M10000110G01	ECO103242	E1M10000311C03	ECO103240	S1M10000032G06	SAU800344
E1M10000110G01	ECO103243	E1M10000311C03	ECO103241	S1M10000032A07	SAU801760
E1M10000110H01	ECO103263	E1M10000311D03	ECO103528	S1M10000032B07	SAU800546
E1M10000110E09	ECO103736	E1M10000311H03	ECO102868	S1M10000032C07	SAU802555
E1M10000110A12	ECO102035	E1M10000311D04	ECO102636	S1M10000032D07	SAU801511
E1M10000112F05	ECO104157	E1M10000311E05	ECO100255	S1M10000032F07	SAU802654
E1M10000113F02	ECO101796	E1M10000311F05	ECO102309	S1M10000032H07	SAU802234
E1M10000113A11	ECO104237	E1M10000311D06	ECO103217	S1M10000032H07	SAU802233
E1M10000111C03	ECO103238	E1M10000311C07	ECO103263	S1M10000032A08	SAU800217
E1M10000111C03	ECO103239	E1M10000311E07	ECO103885	S1M10000032A08	SAU800218

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M1000011E04	ECO103613	E1M10000311F07	ECO103243	S1M10000032B08	SAU801523
E1M1000011F09	ECO103624	E1M10000311D08	ECO103886	S1M10000032E08	SAU802161
E1M1000011F09	ECO103625	E1M10000311C09	ECO103218	S1M10000032G08	SAU800542
E1M10000115H01	ECO103777	E1M10000311F09	ECO101995	S1M10000032B09	SAU800434
E1M10000115G02	ECO103218	E1M10000311F09	ECO101996	S1M10000032C09	SAU800548
E1M10000115E03	ECO103163	E1M10000311C10	ECO101259	S1M10000032D09	SAU801626
E1M10000115G04	ECO302213	E1M10000311E11	ECO102636	S1M10000032D09	SAU801625
E1M10000115C06	ECO100184	E1M10000311B12	ECO100632	S1M10000032D09	SAU801624
E1M10000116B01	ECO101086	E1M10000311F12	ECO103115	S1M10000032E09	SAU801475
E1M10000106D02	ECO103234	E1M10000292C05	ECO104183	S1M10000032H09	SAU800548
E1M10000106D02	ECO103235	E1M10000292D08	ECO103220	S1M10000032A10	SAU801089
E1M10000106G02	ECO103243	E1M10000292D08	ECO103221	S1M10000032B10	SAU801644
E1M10000106E04	ECO103263	E1M10000292A09	ECO101834	S1M10000032C10	SAU800155
E1M10000106F05	ECO103624	E1M10000292C12	ECO101438	S1M10000032C10	SAU800156
E1M10000106F05	ECO103625	E1M10000294F01	ECO103265	S1M10000032E10	SAU801263
E1M10000106H05	ECO103884	E1M10000294F01	ECO103266	S1M10000032F10	SAU801434
E1M10000106H06	ECO103394	E1M10000294C02	ECO103226	S1M10000032F10	SAU102585
E1M10000106A08	ECO103266	E1M10000294E02	ECO103237	S1M10000032G10	SAU800548
E1M10000106E09	ECO101347	E1M10000294G02	ECO103238	S1M10000032B11	SAU801396
E1M10000106E09	ECO101348	E1M10000294G02	ECO103239	S1M10000032C11	SAU800117
E1M10000106G10	ECO102104	E1M10000294A04	ECO100095	S1M10000032C11	SAU800116
E1M10000106D11	ECO301060	E1M10000294C04	ECO101307	S1M10000032D11	SAU801626
E1M10000106D11	ECO302213	E1M10000294C04	ECO202164	S1M10000032D11	SAU801625
E1M10000122B03	ECO102227	E1M10000294F04	ECO103264	S1M10000032D11	SAU801624
E1M10000123D05	ECO100139	E1M10000294F04	ECO103265	S1M10000032E11	SAU800391
E1M10000123C09	ECO103231	E1M10000294H04	ECO104090	S1M10000032F11	SAU800173
E1M10000123E09	ECO101689	E1M10000294D05	ECO100144	S1M10000032H11	SAU802496
E1M10000123H10	ECO102255	E1M10000294D05	ECO100145	S1M10000032B12	SAU801193
E1M10000123F11	ECO103226	E1M10000294F05	ECO103243	S1M10000032C12	SAU800117
E1M10000107B02	ECO100298	E1M10000294F05	ECO103244	S1M10000032C12	SAU800116
E1M10000107E02	ECO102706	E1M10000294H05	ECO102336	S1M10000032E12	SAU800526
E1M10000107E02	ECO102705	E1M10000294C06	ECO103116	S1M10000032F12	SAU801644
E1M10000107G02	ECO103543	E1M10000294F06	ECO103878	S1M10000032G12	SAU801771
E1M10000107B03	ECO103163	E1M10000294F06	ECO204942	S1M10000033H01	SAU800490
E1M10000107B03	ECO103164	E1M10000294G06	ECO103224	S1M10000033A02	SAU801434
E1M10000107C03	ECO101468	E1M10000294G06	ECO103225	S1M10000033B02	SAU802223
E1M10000107H04	ECO102227	E1M10000294A08	ECO103236	S1M10000033D02	SAU802613
E1M10000107G08	ECO100158	E1M10000294A08	ECO103237	S1M10000033F02	SAU800489
E1M10000107F09	ECO103884	E1M10000294B09	ECO103227	S1M10000033H02	SAU800548
E1M10000107H09	ECO102065	E1M10000294E09	ECO100135	S1M10000033D03	SAU800542
E1M10000117C12	ECO103479	E1M10000294F09	ECO100885	S1M10000033F03	SAU801096
E1M10000118C04	ECO102201	E1M10000294B10	ECO104092	S1M10000033H03	SAU802125
E1M10000118B05	ECO103626	E1M10000294G10	ECO103886	S1M10000033C04	SAU800366
E1M10000118C05	ECO100645	E1M10000294F11	ECO103262	S1M10000033D04	SAU801493
E1M10000118G06	ECO103766	E1M10000294F11	ECO103878	S1M10000033E04	SAU802689
E1M10000119D02	ECO103624	E1M10000294F11	ECO204942	S1M10000033D05	SAU800535
E1M10000119D02	ECO103625	E1M10000294B12	ECO103242	S1M10000033G05	SAU801703
E1M10000119D03	ECO104081	E1M10000294B12	ECO103243	S1M10000033D06	SAU801189
E1M10000119A04	ECO100139	E1M10000294C12	ECO101324	S1M10000033F06	SAU800016
E1M10000131H01	ECO102227	E1M10000294E12	ECO103399	S1M10000033A07	SAU802418
E1M10000131F04	ECO100500	E1M10000300F05	ECO204448	S1M10000033B07	SAU800363
E1M10000131F04	ECO100501	E1M10000300E08	ECO102920	S1M10000033F07	SAU800363
E1M10000131C06	ECO103233	E1M10000300G09	ECO100169	S1M10000033G07	SAU802133

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000131B07	ECO103238	E1M10000301F02	ECO103097	S1M10000033H07	SAU800528
E1M10000131B07	ECO103239	E1M10000301F02	ECO103098	S1M10000033A08	SAU800641
E1M10000131C07	ECO103238	E1M10000301F03	ECO104218	S1M10000033B08	SAU801263
E1M10000131C07	ECO103239	E1M10000301G05	ECO100663	S1M10000033H08	SAU801831
E1M10000131A10	ECO103241	E1M10000301C06	ECO103222	S1M10000033F09	SAU800517
E1M10000131A10	ECO103242	E1M10000301C06	ECO103223	S1M10000033F09	SAU202623
E1M10000131G10	ECO100501	E1M10000301F06	ECO103488	S1M10000033G09	SAU800179
E1M10000131G10	ECO100502	E1M10000301G08	ECO103883	S1M10000033H09	SAU800830
E1M10000135B02	ECO100501	E1M10000301G08	ECO103884	S1M10000033H09	SAU800829
E1M10000135B02	ECO100502	E1M10000301C09	ECO104243	S1M10000033A10	SAU802686
E1M10000132C01	ECO102857	E1M10000301C09	ECO104242	S1M10000033D10	SAU801269
E1M10000132F02	ECO101583	E1M10000301C09	ECO104241	S1M10000033E10	SAU801521
E1M10000132H04	ECO103232	E1M10000301F09	ECO102363	S1M10000033G10	SAU802262
E1M10000132H04	ECO103233	E1M10000301D10	ECO102462	S1M10000033H10	SAU600582
E1M10000132G08	ECO100852	E1M10000301F10	ECO102593	S1M10000033B11	SAU802262
E1M10000133A06	ECO100741	E1M10000301G12	ECO103237	S1M10000033F11	SAU801243
E1M10000133B08	ECO101347	E1M10000309G01	ECO103238	S1M10000033G11	SAU802273
E1M10000133B08	ECO101348	E1M10000309G01	ECO103239	S1M10000033H11	SAU800019
E1M10000133D09	ECO102763	E1M10000309A02	ECO100757	S1M10000033H11	SAU800020
E1M10000144B01	ECO103932	E1M10000309G02	ECO101700	S1M10000033B12	SAU802359
E1M10000144C02	ECO103238	E1M10000309A03	ECO100980	S1M10000033B12	SAU802360
E1M10000144C02	ECO103239	E1M10000309E03	ECO102301	S1M10000033B12	SAU202256
E1M10000144E03	ECO103451	E1M10000309G03	ECO103883	S1M10000033D12	SAU801621
E1M10000144F03	ECO102104	E1M10000309G03	ECO103884	S1M10000033E12	SAU800509
E1M10000144B06	ECO103911	E1M10000309H04	ECO101687	S1M10000033G12	SAU800537
E1M10000144G06	ECO103238	E1M10000309H05	ECO103883	S1M10000034B01	SAU802654
E1M10000144G07	ECO102141	E1M10000309B06	ECO100886	S1M10000034D01	SAU800517
E1M10000144A08	ECO103217	E1M10000309B07	ECO101067	S1M10000034D01	SAU202623
E1M10000144A08	ECO103218	E1M10000309E07	ECO104010	S1M10000034E01	SAU800001
E1M10000144C10	ECO102144	E1M10000309B08	ECO100184	S1M10000034F01	SAU801843
E1M10000145E01	ECO103240	E1M10000309B08	ECO100185	S1M10000034H01	SAU801677
E1M10000145E01	ECO103241	E1M10000309E08	ECO103453	S1M10000034A02	SAU800699
E1M10000146H01	ECO103242	E1M10000309E08	ECO103454	S1M10000034C02	SAU801597
E1M10000146H01	ECO103243	E1M10000309E08	ECO204438	S1M10000034E02	SAU801597
E1M10000146D02	ECO101324	E1M10000309G09	ECO103185	S1M10000034F02	SAU802599
E1M10000146E05	ECO103658	E1M10000309A10	ECO101763	S1M10000034G02	SAU801181
E1M10000146E05	ECO103659	E1M10000309G11	ECO103284	S1M10000034H02	SAU800517
E1M10000124E02	ECO103566	E1M10000309H11	ECO103237	S1M10000034B03	SAU800548
E1M10000124G03	ECO100139	E1M10000309F12	ECO103226	S1M10000034F03	SAU800320
E1M10000124G04	ECO100662	E1M10000310G01	ECO103528	S1M10000034G03	SAU800700
E1M10000124C05	ECO103231	E1M10000310C02	ECO102636	S1M10000034H03	SAU801517
E1M10000124E06	ECO102788	E1M10000310G02	ECO103264	S1M10000034H03	SAU801516
E1M10000124D09	ECO103807	E1M10000310D03	ECO103116	S1M10000034A04	SAU800367
E1M10000125A02	ECO104237	E1M10000310H03	ECO102065	S1M10000034A04	SAU800366
E1M10000125F07	ECO100702	E1M10000310H03	ECO102066	S1M10000034E04	SAU802247
E1M10000125F09	ECO101796	E1M10000310A04	ECO103263	S1M10000034E04	SAU802248
E1M10000120F01	ECO102857	E1M10000310B04	ECO103263	S1M10000034F04	SAU802502
E1M10000120E04	ECO102857	E1M10000310C04	ECO102636	S1M10000034A05	SAU801719
E1M10000120E05	ECO103263	E1M10000310D04	ECO103809	S1M10000034B05	SAU800452
E1M10000120A06	ECO101995	E1M10000310A05	ECO103236	S1M10000034D05	SAU800548
E1M10000120F06	ECO103232	E1M10000310A05	ECO103237	S1M10000034E05	SAU801687
E1M10000120F06	ECO103233	E1M10000310C05	ECO103217	S1M10000034F05	SAU800452
E1M10000120A10	ECO103265	E1M10000310A06	ECO103097	S1M10000034B06	SAU800252

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000120A10	ECO103266	E1M10000310D06	ECO101687	S1M10000034C06	SAU800138
E1M10000120G10	ECO101475	E1M10000310F06	ECO103218	S1M10000034C06	SAU802137
E1M10000120G10	ECO101476	E1M10000310A07	ECO102355	S1M10000034D06	SAU800138
E1M10000120G10	ECO201962	E1M10000310B07	ECO100095	S1M10000034D06	SAU802137
E1M10000136C01	ECO103884	E1M10000310E07	ECO101834	S1M10000034E06	SAU801297
E1M10000136C01	ECO103885	E1M10000310A08	ECO100468	S1M10000034E06	SAU801296
E1M10000136H01	ECO103242	E1M10000310C09	ECO104243	S1M10000034E06	SAU201900
E1M10000136H01	ECO103243	E1M10000310C09	ECO104242	S1M10000034G06	SAU802496
E1M10000136E02	ECO103263	E1M10000310C09	ECO104241	S1M10000034H06	SAU801518
E1M10000136B03	ECO100256	E1M10000310H09	ECO101844	S1M10000034B07	SAU800962
E1M10000136D03	ECO103515	E1M10000310B11	ECO103242	S1M10000034C07	SAU801698
E1M10000121D01	ECO100703	E1M10000310B11	ECO103243	S1M10000034D07	SAU801493
E1M10000121G05	ECO100256	E1M10000310F11	ECO103242	S1M10000034E07	SAU800742
E1M10000121F06	ECO102787	E1M10000310F11	ECO103243	S1M10000034F07	SAU801831
E1M10000121E07	ECO102309	E1M10000310D12	ECO102764	S1M10000034G07	SAU800179
E1M10000121E07	ECO102310	E1M10000316D03	ECO103878	S1M10000034H07	SAU800962
E1M10000121D08	ECO103242	E1M10000316D03	ECO204942	S1M10000034A08	SAU802662
E1M10000121D08	ECO103243	E1M10000316G03	ECO102999	S1M10000034B08	SAU801701
E1M10000129G04	ECO101480	E1M10000316G03	ECO103000	S1M10000034D08	SAU802160
E1M10000129F10	ECO102819	E1M10000316C04	ECO103228	S1M10000034F08	SAU802464
E1M10000129F11	ECO103394	E1M10000316H05	ECO103225	S1M10000034G08	SAU800547
E1M10000126E08	ECO103243	E1M10000316H05	ECO103226	S1M10000034H08	SAU800511
E1M10000126F12	ECO103265	E1M10000316D08	ECO102300	S1M10000034A09	SAU802120
E1M10000126F12	ECO103266	E1M10000316A11	ECO102612	S1M10000034B09	SAU800550
E1M10000127D03	ECO100702	E1M10000316D11	ECO101188	S1M10000034C09	SAU802161
E1M10000127C09	ECO100135	E1M10000280A04	ECO103424	S1M10000034F09	SAU801264
E1M10000127C09	ECO100136	E1M10000281E01	ECO103226	S1M10000034G09	SAU801434
E1M10000127D09	ECO103217	E1M10000281E01	ECO103227	S1M10000034H09	SAU802240
E1M10000127D09	ECO103218	E1M10000281G01	ECO103883	S1M10000034B10	SAU800472
E1M10000137C03	ECO100139	E1M10000281E03	ECO103881	S1M10000034B10	SAU800473
E1M10000137C03	ECO100140	E1M10000281E03	ECO103882	S1M10000034D10	SAU800317
E1M10000137C04	ECO103242	E1M10000281H03	ECO103240	S1M10000034E10	SAU800101
E1M10000137C04	ECO103243	E1M10000281C08	ECO103242	S1M10000034F10	SAU800593
E1M10000137E07	ECO103884	E1M10000281C11	ECO102192	S1M10000034H10	SAU800122
E1M10000137B08	ECO102309	E1M10000282A02	ECO103884	S1M10000034A11	SAU800186
E1M10000137G09	ECO101684	E1M10000284B01	ECO103881	S1M10000034D11	SAU800472
E1M10000137G09	ECO101685	E1M10000284B01	ECO103880	S1M10000034E11	SAU800472
E1M10000137C11	ECO102857	E1M10000284A03	ECO103243	S1M10000034G11	SAU801450
E1M10000139B07	ECO102227	E1M10000284A03	ECO103244	S1M10000034A12	SAU800453
E1M10000139E10	ECO103263	E1M10000284B03	ECO102300	S1M10000034B12	SAU800538
E1M10000139B11	ECO102303	E1M10000284H03	ECO103230	S1M10000034C12	SAU802070
E1M10000140B05	ECO102787	E1M10000284H03	ECO103231	S1M10000034D12	SAU800453
E1M10000142H03	ECO101111	E1M10000284C05	ECO103237	S1M10000034D12	SAU200237
E1M10000142D05	ECO101763	E1M10000284E05	ECO101366	S1M10000034E12	SAU800601
E1M10000142F12	ECO100236	E1M10000284D06	ECO101259	S1M10000034F12	SAU801476
E1M10000143D03	ECO102842	E1M10000284H06	ECO100886	S1M10000034G12	SAU801597
E1M10000143A09	ECO100488	E1M10000284H06	ECO100885	S1M10000035B01	SAU801025
E1M10000143A09	ECO100490	E1M10000284A08	ECO100572	S1M10000035C01	SAU800543
E1M10000143A09	ECO100491	E1M10000284A08	ECO102351	S1M10000035D01	SAU800517
E1M10000143G09	ECO101994	E1M10000284D08	ECO103219	S1M10000035H01	SAU802245
E1M10000143A12	ECO100850	E1M10000284G11	ECO103696	S1M10000035C02	SAU800966
E1M10000147B03	ECO102827	E1M10000284G11	ECO103697	S1M10000035E02	SAU802714
E1M10000147B03	ECO102828	E1M10000284C12	ECO103878	S1M10000035G02	SAU801618

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000147D05	ECO103263	E1M10000284C12	ECO204942	S1M10000035A03	SAU801621
E1M10000148C02	ECO103242	E1M10000284D12	ECO102671	S1M10000035B03	SAU800776
E1M10000148C02	ECO103243	E1M10000284G12	ECO103229	S1M10000035E03	SAU800014
E1M10000148D08	ECO202902	E1M10000284G12	ECO103230	S1M10000035F03	SAU802309
E1M10000148B09	ECO103054	E1M10000285B03	ECO101684	S1M10000035F03	SAU802308
E1M10000148H09	ECO102787	E1M10000285D03	ECO101259	S1M10000035B04	SAU800776
E1M10000155C02	ECO101324	E1M10000285H03	ECO104242	S1M10000035C04	SAU801011
E1M10000155F04	ECO102827	E1M10000285F04	ECO100632	S1M10000035D04	SAU800543
E1M10000155F04	ECO102828	E1M10000285G04	ECO103218	S1M10000035E04	SAU802368
E1M10000155B05	ECO101347	E1M10000285D05	ECO101684	S1M10000035F04	SAU801096
E1M10000155B05	ECO101348	E1M10000285D05	ECO101685	S1M10000035C06	SAU801114
E1M10000155A06	ECO102588	E1M10000285B07	ECO103263	S1M10000035D06	SAU801193
E1M10000155C06	ECO100702	E1M10000285G07	ECO100095	S1M10000035H07	SAU802207
E1M10000155C06	ECO100703	E1M10000285B08	ECO101684	S1M10000035H07	SAU802206
E1M10000155B11	ECO102986	E1M10000285B08	ECO101685	S1M10000035A08	SAU801758
E1M10000155F12	ECO101086	E1M10000285D08	ECO103242	S1M10000035B08	SAU802400
E1M10000152B01	ECO103263	E1M10000285G08	ECO103756	S1M10000035E08	SAU600582
E1M10000152G01	ECO100500	E1M10000285D09	ECO103878	S1M10000035H08	SAU801084
E1M10000152G01	ECO100501	E1M10000285D09	ECO204942	S1M10000035A09	SAU801912
E1M10000152G01	ECO100502	E1M10000285F09	ECO102555	S1M10000035A09	SAU801913
E1M10000152G03	ECO102227	E1M10000285F09	ECO102556	S1M10000035D09	SAU800984
E1M10000152F04	ECO103233	E1M10000285D10	ECO103218	S1M10000035E09	SAU800699
E1M10000152H04	ECO103233	E1M10000285F10	ECO103242	S1M10000035F09	SAU800170
E1M10000152B05	ECO101324	E1M10000285F10	ECO103243	S1M10000035G09	SAU800170
E1M10000152B06	ECO103233	E1M10000285G10	ECO104028	S1M10000035H09	SAU800287
E1M10000152C08	ECO103238	E1M10000285E11	ECO100475	S1M10000035H09	SAU200106
E1M10000152C08	ECO103239	E1M10000285F11	ECO103886	S1M10000035A10	SAU800170
E1M10000152H08	ECO103624	E1M10000285G11	ECO102593	S1M10000035H10	SAU800545
E1M10000152H08	ECO103625	E1M10000285F12	ECO102637	S1M10000035A11	SAU800545
E1M10000152E09	ECO103528	E1M10000286E03	ECO104233	S1M10000035B11	SAU800545
E1M10000153H03	ECO103233	E1M10000286C12	ECO103230	S1M10000035C11	SAU800542
E1M10000153C04	ECO102880	E1M10000286C12	ECO103231	S1M10000035G11	SAU801697
E1M10000153E04	ECO101583	E1M10000287H06	ECO104131	S1M10000035H11	SAU801697
E1M10000153F05	ECO102847	E1M10000289D04	ECO101475	S1M10000035A12	SAU802503
E1M10000153A09	ECO103408	E1M10000289D04	ECO101476	S1M10000035D12	SAU801740
E1M10000156D07	ECO103237	E1M10000289D04	ECO201962	S1M10000035E12	SAU801193
E1M10000156D07	ECO103238	E1M10000289G12	ECO101324	S1M10000035G12	SAU800548
E1M10000156B08	ECO103780	E1M10000293B03	ECO103236	S1M10000036C01	SAU801246
E1M10000156B09	ECO100488	E1M10000293B03	ECO103237	S1M10000036H01	SAU802238
E1M10000156B09	ECO100490	E1M10000293G03	ECO101324	S1M10000036A02	SAU800014
E1M10000156B09	ECO100491	E1M10000296H06	ECO104090	S1M10000036D02	SAU801526
E1M10000156G12	ECO102470	E1M10000299E01	ECO101498	S1M10000036H02	SAU801193
E1M10000157F01	ECO102227	E1M10000299E01	ECO201937	S1M10000036A03	SAU801719
E1M10000157B02	ECO104019	E1M10000299E01	ECO101499	S1M10000036C03	SAU800391
E1M10000157C04	ECO102255	E1M10000299E02	ECO103265	S1M10000036G03	SAU801183
E1M10000157B09	ECO103231	E1M10000299E02	ECO103266	S1M10000036H03	SAU801257
E1M10000160C02	ECO103646	E1M10000299B03	ECO103229	S1M10000036A04	SAU801095
E1M10000160F02	ECO103884	E1M10000299E08	ECO103886	S1M10000036B04	SAU801518
E1M10000160A03	ECO101583	E1M10000300D10	ECO102462	S1M10000036B04	SAU801517
E1M10000160C03	ECO101084	E1M10000300H10	ECO104243	S1M10000036C04	SAU800001
E1M10000160H03	ECO103572	E1M10000300H10	ECO104242	S1M10000036H04	SAU801257
E1M10000160H05	ECO102335	E1M10000300F11	ECO101671	S1M10000036A05	SAU802222
E1M10000160A06	ECO102764	E1M10000302H05	ECO103262	S1M10000036A05	SAU802221

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000160D07	ECO102588	E1M10000302H05	ECO103878	S1M10000036C05	SAU801342
E1M10000160G07	ECO101347	E1M10000302H05	ECO204942	S1M10000036H05	SAU802233
E1M10000160G07	ECO101348	E1M10000306D03	ECO103881	S1M10000036B06	SAU801899
E1M10000160B09	ECO101995	E1M10000306D03	ECO103880	S1M10000036C06	SAU800547
E1M10000160C09	ECO103217	E1M10000307A08	ECO101259	S1M10000036D06	SAU802371
E1M10000160C09	ECO103218	E1M10000308B03	ECO103263	S1M10000036D06	SAU802372
E1M10000160E09	ECO103479	E1M10000311A02	ECO100170	S1M10000036E06	SAU800539
E1M10000160E10	ECO103710	E1M10000311A07	ECO100867	S1M10000036F06	SAU801719
E1M10000160B11	ECO102309	E1M10000311A07	ECO100868	S1M10000036H06	SAU802154
E1M10000160F11	ECO102847	E1M10000313E07	ECO103240	S1M10000036A07	SAU800354
E1M10000162C01	ECO102950	E1M10000313E07	ECO103241	S1M10000036A07	SAU302737
E1M10000162C01	ECO102949	E1M10000314G03	ECO103244	S1M10000036B07	SAU801354
E1M10000162A03	ECO101324	E1M10000314F08	ECO103453	S1M10000036C07	SAU802231
E1M10000162F03	ECO103163	E1M10000314F08	ECO204438	S1M10000036C07	SAU802230
E1M10000162G05	ECO101932	E1M10000317H03	ECO103230	S1M10000036F07	SAU800543
E1M10000162H06	ECO103159	E1M10000317H03	ECO103231	S1M10000036G07	SAU800589
E1M10000162B08	ECO102763	E1M10000317C04	ECO103228	S1M10000036A08	SAU801636
E1M10000162A09	ECO101370	E1M10000317C05	ECO103886	S1M10000036B08	SAU801899
E1M10000162F12	ECO202228	K1M10000002F02	KPN200073	S1M10000036D08	SAU800548
E1M10000163H01	ECO100023	K1M10000003C01	KPN201086	S1M10000036E08	SAU800753
E1M10000163F02	ECO102827	K1M10000003C01	KPN201087	S1M10000036F08	SAU802506
E1M10000163F02	ECO102828	K1M10000003C01	KPN103883	S1M10000036G08	SAU802610
E1M10000163A04	ECO101436	K1M10000004F06	KPN208757	S1M10000036H08	SAU801257
E1M10000163C04	ECO103163	K1M10000007F01	KPN203895	S1M10000036B09	SAU802654
E1M10000163C04	ECO103164	K1M10000007F01	KPN303445	S1M10000036C09	SAU801434
E1M10000163B12	ECO101324	K1M10000007F01	KPN203896	S1M10000036F09	SAU801530
E1M10000164A02	ECO102787	K1M10000008C10	KPN204465	S1M10000036F09	SAU801529
E1M10000164F04	ECO103423	K1M10000008C10	KPN204464	S1M10000036A10	SAU802251
E1M10000164H05	ECO103884	K1M10000013E04	KPN201990	S1M10000036C10	SAU800539
E1M10000154F03	ECO101822	K1M10000013E06	KPN203025	S1M10000036C10	SAU800540
E1M10000154H07	ECO103671	K1M10000015E05	KPN203487	S1M10000036C10	SAU800541
E1M10000154H07	ECO103672	K1M10000019D06	KPN208757	S1M10000036D10	SAU800366
E1M10000150E02	ECO101945	K1M10000020B02	KPN204465	S1M10000036F10	SAU801484
E1M10000150G05	ECO103059	K1M10000022C10	KPN203310	S1M10000036A11	SAU801193
E1M10000151C03	ECO304472	K1M10000030C03	KPN300969	S1M10000036B11	SAU801760
E1M10000151C04	ECO101932	K1M10000030C03	KPN201549	S1M10000036D11	SAU800699
E1M10000151G10	ECO100473	K1M10000030C03	KPN203973	S1M10000036D11	SAU800700
E1M10000159F03	ECO102783	K1M10000030C03	KPN108099	S1M10000036E11	SAU801698
E1M10000159F07	ECO103231	K1M10000030C03	KPN207255	S1M10000036F11	SAU802397
E1M10000159A09	ECO100500	K1M10000030C04	KPN300969	S1M10000036G11	SAU802075
E1M10000159A09	ECO100501	K1M10000030C04	KPN201549	S1M10000036H11	SAU801899
E1M10000159C10	ECO103221	K1M10000030C04	KPN203973	S1M10000036A12	SAU801269
E1M10000159C10	ECO103222	K1M10000030C04	KPN108099	S1M10000036B12	SAU802240
E1M10000159C11	ECO103263	K1M10000030C04	KPN207255	S1M10000036D12	SAU801193
E1M10000161D04	ECO102986	K1M10000030C07	KPN203534	S1M10000036E12	SAU801240
E1M10000161A05	ECO102588	K1M10000030E07	KPN204596	S1M10000037G01	SAU802469
E1M10000161E05	ECO103231	K1M10000032E11	KPN204465	S1M10000037G01	SAU802468
E1M10000161C06	ECO103227	K1M10000033E01	KPN203246	S1M10000037A02	SAU801900
E1M10000161C06	ECO103228	K1M10000033B02	KPN204465	S1M10000037A02	SAU801899
E1M10000171E01	ECO100500	K1M10000037D10	KPN203084	S1M10000037E02	SAU800014
E1M10000171E01	ECO100501	K1M10000038D04	KPN203487	S1M10000037E02	SAU800015
E1M10000171E01	ECO100502	K1M10000039A12	KPN203487	S1M10000037F02	SAU800276
E1M10000171E05	ECO103263	K1M10000043E02	KPN206685	S1M10000037G02	SAU802100

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000172C01	ECO102690	K1M10000043D05	KPN203146	S1M10000037H02	SAU801760
E1M10000172C05	ECO103232	K1M10000043H10	KPN200459	S1M10000037A03	SAU801626
E1M10000172C05	ECO103233	K1M10000043H10	KPN200460	S1M10000037A03	SAU801625
E1M10000172C07	ECO100366	K1M10000044G05	KPN206300	S1M10000037A03	SAU801624
E1M10000172C07	ECO100367	K1M10000045D10	KPN203146	S1M10000037B03	SAU800526
E1M10000173B01	ECO103228	P1M10000008G04	PAE201546	S1M10000037E03	SAU801269
E1M10000173D01	ECO103228	P1M10000008C06	PAE202422	S1M10000037F03	SAU802076
E1M10000166G06	ECO101712	P1M10000008C06	PAE100416	S1M10000037G03	SAU801697
E1M10000167E03	ECO101324	P1M10000010C03	PAE204992	S1M10000037H03	SAU801011
E1M10000167F04	ECO101932	P1M10000015C09	PAE203039	S1M10000037B04	SAU801537
E1M10000167G04	ECO101932	P1M10000015C09	PAE203038	S1M10000037D04	SAU801241
E1M10000168H01	ECO104237	P1M10000018B01	PAE204262	S1M10000037F04	SAU801511
E1M10000168B02	ECO103227	P1M10000018C01	PAE204262	S1M10000037B05	SAU800367
E1M10000168B02	ECO103228	P1M10000018E01	PAE204064	S1M10000037B05	SAU800366
E1M10000168F02	ECO103960	P1M10000019F01	PAE204269	S1M10000037C05	SAU801231
E1M10000168G02	ECO103217	P1M10000019F01	PAE204270	S1M10000037D05	SAU801011
E1M10000168A03	ECO103163	P1M10000019E02	PAE203045	S1M10000037F05	SAU802225
E1M10000168A04	ECO101796	P1M10000021G03	PAE204262	S1M10000037F05	SAU802224
E1M10000169H02	ECO100850	P1M10000021G05	PAE204248	S1M10000037H05	SAU801644
E1M10000176C01	ECO103220	P1M10000021G05	PAE204249	S1M10000037A06	SAU801644
E1M10000176F01	ECO100262	P1M10000022D09	PAE205294	S1M10000037B06	SAU802225
E1M10000184C01	ECO103422	P1M10000024H03	PAE202311	S1M10000037B06	SAU802224
E1M10000184G02	ECO102507	P1M10000024D06	PAE203158	S1M10000037C06	SAU801899
E1M10000184C06	ECO102749	P1M10000024E06	PAE204883	S1M10000037D06	SAU800528
E1M10000184F08	ECO101084	P1M10000024E06	PAE204884	S1M10000037E06	SAU802082
E1M10000184G08	ECO103217	P1M10000025G07	PAE203151	S1M10000037F06	SAU801434
E1M10000184C09	ECO100473	P1M10000025G07	PAE203152	S1M10000037G06	SAU800542
E1M10000184F09	ECO103228	P1M10000025H07	PAE203151	S1M10000037B07	SAU800555
E1M10000184F10	ECO103242	P1M10000025H07	PAE203152	S1M10000037C07	SAU802365
E1M10000184G12	ECO103222	P1M10000026H02	PAE203011	S1M10000037F07	SAU802262
E1M10000184G12	ECO103223	P1M10000026F04	PAE202220	S1M10000037H07	SAU801517
E1M10000185D01	ECO103544	P1M10000026H05	PAE203151	S1M10000037A08	SAU802054
E1M10000185A02	ECO102885	P1M10000026H05	PAE203152	S1M10000037B08	SAU800391
E1M10000185B03	ECO101343	P1M10000026E06	PAE200714	S1M10000037C08	SAU800542
E1M10000186A02	ECO104167	P1M10000026E09	PAE105557	S1M10000037E08	SAU802246
E1M10000186F03	ECO101675	P1M10000026E09	PAE109154	S1M10000037E08	SAU802245
E1M10000186G03	ECO103220	P1M10000026G09	PAE203009	S1M10000037F08	SAU802481
E1M10000186G03	ECO103221	P1M10000027B02	PAE203151	S1M10000037G08	SAU800984
E1M10000186A04	ECO100663	P1M10000027B02	PAE203152	S1M10000037H08	SAU800543
E1M10000186A08	ECO103232	P1M10000027G05	PAE202311	S1M10000037A09	SAU802503
E1M10000186H10	ECO103527	P1M10000027A06	PAE204255	S1M10000037C09	SAU802139
E1M10000186H10	ECO103528	P1M10000028B01	PAE204261	S1M10000037D09	SAU800776
E1M10000186E11	ECO100811	P1M10000028E02	PAE202582	S1M10000037E09	SAU800359
E1M10000186G12	ECO101324	P1M10000028A08	PAE200787	S1M10000037F09	SAU800391
E1M10000187D01	ECO103263	P1M10000029G03	PAE201300	S1M10000037H09	SAU802245
E1M10000187G04	ECO100593	P1M10000029H05	PAE200352	S1M10000037B10	SAU801695
E1M10000187D06	ECO103263	P1M10000029A09	PAE203152	S1M10000037C10	SAU800542
E1M10000187G06	ECO101256	P1M10000032F04	PAE200264	S1M10000037E10	SAU802113
E1M10000187G06	ECO101257	P1M10000033F01	PAE201984	S1M10000037F10	SAU801511
E1M10000187G09	ECO101365	P1M10000033A02	PAE203066	S1M10000037G10	SAU800738
E1M10000187G09	ECO101366	P1M10000033E03	PAE203981	S1M10000037A11	SAU802293
E1M10000187A10	ECO104214	P1M10000033D06	PAE203004	S1M10000037A11	SAU802292
E1M10000187G10	ECO102177	P1M10000033D06	PAE203003	S1M10000037B11	SAU801274

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000187H10	ECO104091	P1M10000033B08	PAE204242	S1M10000037E11	SAU800006
E1M10000187H10	ECO104092	P1M10000033B08	PAE204243	S1M10000037H11	SAU801740
E1M10000187F11	ECO103226	P1M10000035A06	PAE204246	S1M10000037A12	SAU802506
E1M10000187G11	ECO101475	P1M10000035A06	PAE204247	S1M10000037B12	SAU801193
E1M10000187G11	ECO101476	P1M10000037B12	PAE204252	S1M10000037D12	SAU800526
E1M10000187G11	ECO201962	P1M10000037B12	PAE204253	S1M10000037E12	SAU802247
E1M10000188B06	ECO102210	P1M10000037G12	PAE205071	S1M10000038B01	SAU801232
E1M10000188E07	ECO101822	P1M10000038G02	PAE204540	S1M10000038C01	SAU801900
E1M10000188G11	ECO101261	P1M10000038C03	PAE203928	S1M10000038E01	SAU802218
E1M10000188B12	ECO103878	P1M10000038F04	PAE205202	S1M10000038G01	SAU801139
E1M10000188B12	ECO204942	P1M10000038C06	PAE202195	S1M10000038C02	SAU801185
E1M10000189A04	ECO103624	P1M10000038B08	PAE204067	S1M10000038D02	SAU801392
E1M10000189A04	ECO103625	P1M10000038A09	PAE200352	S1M10000038E02	SAU801392
E1M10000189F05	ECO103264	P1M10000039G05	PAE203761	S1M10000038B03	SAU801621
E1M10000189H05	ECO101684	P1M10000039G12	PAE205562	S1M10000038E03	SAU800543
E1M10000189H05	ECO101685	P1M10000040C01	PAE204102	S1M10000038F03	SAU801193
E1M10000189G10	ECO100148	P1M10000040C01	PAE204103	S1M10000038G03	SAU800547
E1M10000189C12	ECO102604	P1M10000040H03	PAE201114	S1M10000038H03	SAU802233
E1M10000189F12	ECO103930	P1M10000040C04	PAE201114	S1M10000038A04	SAU801466
E1M10000190D01	ECO103959	P1M10000040D04	PAE200377	S1M10000038D04	SAU801647
E1M10000190A03	ECO103263	P1M10000040D05	PAE205204	S1M10000038D04	SAU801648
E1M10000190D06	ECO100001	P1M10000040E10	PAE202126	S1M10000038E04	SAU801515
E1M10000190D06	ECO100002	P1M10000041E01	PAE202396	S1M10000038F04	SAU801644
E1M10000190E07	ECO101207	P1M10000041F01	PAE204678	S1M10000038F04	SAU801643
E1M10000190D09	ECO103176	P1M10000041B02	PAE202126	S1M10000038G04	SAU801303
E1M10000190D09	ECO103175	P1M10000041A12	PAE204252	S1M10000038D05	SAU801899
E1M10000190D10	ECO103227	P1M10000041A12	PAE204253	S1M10000038E05	SAU801899
E1M10000190D10	ECO103228	P1M10000042E08	PAE204250	S1M10000038C06	SAU801237
E1M10000190E11	ECO102186	P1M10000042E08	PAE204251	S1M10000038E06	SAU800765
E1M10000191E05	ECO103451	P1M10000042B12	PAE200641	S1M10000038E06	SAU800766
E1M10000191G06	ECO103243	P1M10000043A03	PAE203004	S1M10000038F06	SAU800173
E1M10000191H06	ECO103370	P1M10000043A03	PAE203003	S1M10000038G06	SAU800173
E1M10000191A07	ECO103237	P1M10000043H04	PAE204129	S1M10000038A07	SAU800517
E1M10000191A07	ECO103238	P1M10000043H04	PAE204130	S1M10000038B07	SAU800001
E1M10000191E07	ECO102301	P1M10000043D06	PAE203761	S1M10000038D07	SAU801900
E1M10000191A09	ECO100135	P1M10000044F07	PAE204242	S1M10000038E07	SAU800538
E1M10000191F10	ECO103698	P1M10000044F07	PAE204243	S1M10000038H07	SAU800542
E1M10000191F12	ECO103468	P1M10000046B03	PAE201461	S1M10000038A08	SAU801760
E1M10000192E03	ECO101060	P1M10000046C07	PAE202669	S1M10000038B08	SAU801330
E1M10000192F04	ECO100183	P1M10000046C08	PAE200471	S1M10000038C08	SAU801208
E1M10000192A05	ECO103394	P1M10000046C09	PAE203761	S1M10000038D08	SAU801701
E1M10000192B05	ECO102857	P1M10000046G11	PAE201114	S1M10000038D08	SAU801700
E1M10000192A06	ECO100499	P1M10000047H02	PAE204668	S1M10000038F08	SAU800542
E1M10000192B06	ECO102556	P1M10000047B04	PAE203004	S1M10000038G08	SAU800543
E1M10000192F06	ECO102324	P1M10000047B04	PAE203003	S1M10000038A09	SAU801331
E1M10000192F06	ECO102325	P1M10000047F07	PAE204504	S1M10000038B09	SAU801900
E1M10000192D08	ECO100619	P1M10000047G10	PAE204256	S1M10000038B09	SAU801899
E1M10000192B09	ECO100554	P1M10000047G10	PAE204257	S1M10000038D09	SAU801354
E1M10000192D10	ECO103243	P1M10000047E11	PAE202682	S1M10000038F09	SAU800177
E1M10000192F10	ECO100956	P1M10000048A03	PAE204102	S1M10000038H09	SAU802606
E1M10000192C11	ECO100791	P1M10000048A03	PAE204103	S1M10000038C10	SAU801695
E1M10000192F11	ECO101698	P1M10000049E08	PAE204270	S1M10000038C10	SAU801694
E1M10000192B12	ECO100836	P1M10000049G10	PAE204024	S1M10000038D10	SAU801899

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000193F01	ECO103461	P1M10000050G11	PAE204246	S1M10000038E10	SAU801741
E1M10000193G01	ECO100663	P1M10000050G11	PAE204247	S1M10000038F10	SAU800699
E1M10000193A02	ECO103832	P1M10000051F01	PAE201114	S1M10000038G10	SAU802246
E1M10000193A02	ECO103833	P1M10000051D11	PAE201364	S1M10000038G10	SAU802247
E1M10000193F02	ECO104243	P1M10000052C03	PAE200937	S1M10000038A11	SAU802249
E1M10000193D04	ECO100315	P1M10000052E04	PAE201397	S1M10000038C11	SAU802246
E1M10000193G05	ECO100702	P1M10000052C12	PAE205071	S1M10000038C11	SAU802247
E1M10000193G05	ECO100703	P1M10000053C02	PAE200352	S1M10000038D11	SAU801617
E1M10000193C06	ECO103372	P1M10000053E07	PAE204251	S1M10000038D11	SAU801618
E1M10000193F06	ECO101684	P1M10000053E07	PAE204252	S1M10000038F11	SAU801491
E1M10000193F06	ECO101685	P1M10000053E07	PAE204253	S1M10000038G11	SAU800975
E1M10000193F06	ECO101686	P1M10000053F08	PAE201269	S1M10000038H11	SAU802507
E1M10000193B07	ECO102832	P1M10000053B12	PAE205431	S1M10000038A12	SAU802232
E1M10000193B07	ECO102833	P1M10000055E05	PAE205502	S1M10000038B12	SAU801683
E1M10000193C07	ECO103658	P1M10000055C08	PAE201492	S1M10000038C12	SAU802240
E1M10000193C07	ECO103659	P1M10000055A11	PAE205071	S1M10000038C12	SAU802239
E1M10000193F07	ECO103243	P1M10000056G01	PAE205071	S1M10000038D12	SAU800968
E1M10000193C08	ECO104105	P1M10000056F02	PAE203475	S1M10000038D12	SAU800967
E1M10000193D08	ECO100968	P1M10000056F05	PAE204256	S1M10000038E12	SAU801843
E1M10000193B10	ECO100661	P1M10000056F05	PAE204257	S1M10000038E12	SAU801842
E1M10000193C10	ECO101348	P1M10000056F06	PAE202632	S1M10000038F12	SAU802686
E1M10000193G10	ECO102839	P1M10000056C07	PAE201359	S1M10000038G12	SAU800720
E1M10000193H11	ECO100886	P1M10000058B07	PAE205431	S1M10000039B01	SAU802654
E1M10000193G12	ECO103298	P1M10000061B04	PAE202724	S1M10000039E01	SAU802187
E1M10000194B03	ECO100799	P1M10000061E04	PAE204242	S1M10000039A02	SAU800287
E1M10000194F03	ECO103220	P1M10000061E04	PAE204241	S1M10000039A02	SAU200106
E1M10000194F03	ECO103221	P1M10000061F04	PAE203520	S1M10000039B02	SAU802503
E1M10000194H03	ECO104132	P1M10000062H01	PAE203119	S1M10000039D02	SAU801758
E1M10000194H03	ECO205205	P1M10000062C03	PAE200320	S1M10000039F02	SAU800006
E1M10000194D04	ECO103318	P1M10000062C04	PAE204252	S1M10000039H02	SAU801434
E1M10000194D05	ECO103265	P1M10000062H04	PAE204252	S1M10000039H02	SAU102585
E1M10000194F06	ECO103781	P1M10000062F06	PAE200028	S1M10000039F03	SAU802243
E1M10000194G06	ECO101475	P1M10000062C07	PAE204248	S1M10000039G03	SAU801899
E1M10000194G06	ECO101476	P1M10000062C07	PAE204249	S1M10000039H03	SAU802207
E1M10000194G06	ECO201962	P1M10000062D07	PAE204244	S1M10000039H03	SAU802206
E1M10000194H06	ECO102340	P1M10000062D07	PAE204245	S1M10000039C04	SAU802200
E1M10000194B07	ECO102075	P1M10000062D08	PAE200881	S1M10000039G04	SAU802154
E1M10000194H07	ECO103580	P1M10000062E08	PAE204246	S1M10000039H04	SAU800542
E1M10000194B08	ECO100554	P1M10000062E08	PAE204247	S1M10000039A05	SAU801644
E1M10000194G08	ECO104026	P1M10000062G11	PAE204504	S1M10000039A05	SAU801643
E1M10000194F09	ECO100135	P1M10000062A12	PAE204596	S1M10000039F05	SAU801234
E1M10000194B10	ECO103243	P1M10000062C12	PAE205311	S1M10000039H05	SAU800024
E1M10000194A11	ECO100409	P1M10000063F02	PAE202682	S1M10000039B06	SAU800593
E1M10000194F11	ECO101752	P1M10000063G02	PAE204260	S1M10000039C06	SAU800932
E1M10000194F11	ECO101753	P1M10000063H02	PAE204078	S1M10000039C06	SAU800931
E1M10000194C12	ECO103960	P1M10000064C02	PAE200649	S1M10000039H06	SAU801241
E1M10000194G12	ECO100850	P1M10000064C03	PAE205025	S1M10000039A07	SAU800942
E1M10000194G12	ECO100851	P1M10000064D03	PAE200129	S1M10000039B07	SAU801264
E1M10000195G02	ECO103624	P1M10000064E05	PAE204510	S1M10000039C07	SAU801185
E1M10000195G02	ECO103625	P1M10000064H07	PAE201071	S1M10000039F07	SAU802567
E1M10000195B03	ECO102641	P1M10000064A10	PAE204266	S1M10000039G07	SAU800967
E1M10000195G03	ECO101940	P1M10000064G12	PAE202145	S1M10000039G07	SAU800966
E1M10000195G03	ECO302775	P1M10000065F01	PAE202492	S1M10000039G07	SAU200671

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000195A04	ECO100996	P1M10000065C03	PAE204345	S1M10000039H07	SAU802262
E1M10000195A04	ECO100997	P1M10000065A04	PAE203520	S1M10000039A08	SAU801476
E1M10000195G05	ECO302213	P1M10000065C05	PAE200641	S1M10000039C08	SAU801511
E1M10000195D06	ECO103883	P1M10000065D06	PAE204345	S1M10000039E08	SAU802341
E1M10000195E07	ECO102588	P1M10000065G06	PAE200422	S1M10000039F08	SAU800547
E1M10000195A08	ECO100809	P1M10000065B07	PAE204345	S1M10000039H08	SAU800008
E1M10000195A08	ECO100810	P1M10000065H07	PAE201018	S1M10000039C09	SAU800517
E1M10000195E09	ECO104036	P1M10000066F04	PAE204021	S1M10000039C09	SAU202623
E1M10000195D10	ECO102722	P1M10000066A10	PAE204705	S1M10000039D09	SAU801434
E1M10000195E10	ECO102040	P1M10000066A11	PAE202592	S1M10000039E09	SAU801552
E1M10000195D11	ECO101498	P1M10000067C01	PAE200887	S1M10000039F09	SAU800138
E1M10000195D11	ECO201937	P1M10000067E01	PAE201334	S1M10000039F09	SAU802137
E1M10000195F11	ECO101752	P1M10000067C04	PAE203842	S1M10000039B10	SAU800542
E1M10000195F11	ECO101753	P1M10000067A05	PAE203873	S1M10000039C10	SAU801181
E1M10000196B02	ECO103163	P1M10000067A05	PAE203874	S1M10000039D10	SAU801557
E1M10000196C02	ECO103220	P1M10000067D05	PAE203477	S1M10000039E10	SAU800190
E1M10000196E02	ECO101088	P1M10000067F05	PAE203641	S1M10000039E10	SAU800191
E1M10000196G02	ECO102990	P1M10000067G05	PAE205194	S1M10000039F10	SAU800089
E1M10000196A03	ECO100798	P1M10000067A06	PAE200418	S1M10000039G10	SAU802217
E1M10000196D03	ECO103911	P1M10000067A06	PAE200417	S1M10000039A11	SAU801235
E1M10000196A04	ECO101525	P1M10000067C06	PAE204431	S1M10000039C11	SAU801185
E1M10000196A04	ECO101526	P1M10000067A08	PAE200599	S1M10000039E11	SAU800316
E1M10000196D05	ECO103943	P1M10000067A08	PAE105774	S1M10000039A12	SAU800490
E1M10000196E05	ECO104090	P1M10000068G01	PAE203713	S1M10000039A12	SAU800491
E1M10000196F05	ECO103394	P1M10000068D04	PAE205383	S1M10000039A12	SAU203500
E1M10000196D06	ECO102842	P1M10000068F04	PAE204235	S1M10000039B12	SAU800191
E1M10000196F06	ECO100956	P1M10000068H05	PAE204266	S1M10000039F12	SAU800503
E1M10000196H06	ECO101679	P1M10000068H05	PAE204265	S1M10000040B01	SAU802518
E1M10000196H07	ECO103049	P1M10000068F08	PAE205188	S1M10000040D01	SAU802225
E1M10000196C08	ECO103884	P1M10000068A09	PAE200352	S1M10000040D01	SAU802224
E1M10000196A10	ECO101780	P1M10000069H02	PAE204431	S1M10000040E01	SAU802087
E1M10000196B10	ECO101637	P1M10000069B05	PAE200960	S1M10000040F01	SAU800637
E1M10000196D11	ECO101406	P1M10000069G06	PAE204244	S1M10000040G01	SAU801186
E1M10000196D12	ECO103883	P1M10000069D09	PAE204244	S1M10000040H01	SAU800335
E1M10000196D12	ECO103884	P1M10000069D09	PAE204245	S1M10000040E02	SAU801394
E1M10000197E02	ECO100153	P1M10000070E03	PAE204705	S1M10000040F02	SAU801729
E1M10000197G02	ECO100113	P1M10000070A05	PAE202468	S1M10000040G02	SAU801819
E1M10000197A03	ECO102227	P1M10000070C06	PAE204235	S1M10000040H02	SAU802120
E1M10000197D04	ECO101700	P1M10000070G06	PAE203372	S1M10000040B03	SAU802401
E1M10000197B05	ECO103054	P1M10000070H06	PAE203372	S1M10000040C03	SAU800320
E1M10000197E07	ECO100167	P1M10000070D08	PAE204102	S1M10000040D03	SAU802586
E1M10000197E08	ECO103160	P1M10000070D08	PAE204103	S1M10000040D03	SAU802585
E1M10000197E08	ECO103161	P1M10000070B10	PAE205388	S1M10000040F03	SAU800391
E1M10000197H08	ECO103064	P1M10000070G12	PAE203119	S1M10000040G03	SAU802654
E1M10000197D09	ECO103710	P1M10000071B01	PAE203080	S1M10000040H03	SAU800517
E1M10000197D10	ECO103264	P1M10000071C01	PAE204249	S1M10000040A04	SAU801003
E1M10000197D10	ECO103265	P1M10000071F01	PAE200505	S1M10000040A04	SAU801001
E1M10000197E10	ECO102787	P1M10000071A03	PAE204248	S1M10000040A04	SAU801002
E1M10000197F10	ECO102056	P1M10000071A03	PAE204249	S1M10000040C04	SAU802547
E1M10000197G10	ECO104010	P1M10000071E04	PAE203482	S1M10000040E04	SAU801184
E1M10000197H10	ECO100974	P1M10000073G03	PAE205243	S1M10000040F04	SAU800525
E1M10000197A11	ECO100974	P1M10000073D04	PAE201114	S1M10000040G04	SAU800517
E1M10000197C11	ECO102056	P1M10000073A06	PAE204244	S1M10000040H04	SAU802506

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000197B12	ECO103523	P1M10000073D09	PAE201916	S1M10000040A05	SAU802056
E1M10000198C02	ECO100102	P1M10000073B10	PAE205243	S1M10000040C05	SAU802564
E1M10000198B03	ECO101882	P1M10000074B01	PAE204767	S1M10000040D05	SAU600582
E1M10000198E04	ECO102259	P1M10000074B04	PAE201683	S1M10000040E05	SAU800453
E1M10000198F04	ECO102136	P1M10000074B04	PAE201682	S1M10000040E05	SAU200237
E1M10000198A05	ECO103357	P1M10000074E04	PAE200120	S1M10000040F05	SAU800765
E1M10000198H05	ECO103242	P1M10000074E09	PAE203477	S1M10000040F05	SAU800766
E1M10000198D06	ECO100430	P1M10000074F10	PAE201018	S1M10000040H05	SAU801275
E1M10000198D06	ECO100431	P1M10000074G12	PAE204242	S1M10000040C06	SAU800920
E1M10000198F06	ECO103230	P1M10000074G12	PAE204243	S1M10000040E06	SAU801183
E1M10000198F06	ECO103231	P1M10000075F02	PAE204252	S1M10000040F06	SAU802249
E1M10000198H06	ECO101256	P1M10000075B03	PAE204574	S1M10000040A07	SAU800753
E1M10000198H06	ECO101257	P1M10000075A04	PAE203278	S1M10000040B07	SAU802288
E1M10000198B09	ECO103263	P1M10000075C04	PAE204273	S1M10000040B07	SAU802290
E1M10000198C09	ECO104092	P1M10000075C04	PAE204272	S1M10000040C07	SAU800984
E1M10000198C09	ECO104093	P1M10000075C05	PAE200960	S1M10000040E07	SAU802254
E1M10000198G09	ECO103231	P1M10000075G05	PAE203706	S1M10000040G07	SAU801181
E1M10000198C10	ECO103912	P1M10000076D05	PAE201875	S1M10000040H07	SAU802082
E1M10000198C12	ECO103873	P1M10000076C08	PAE202494	S1M10000040A08	SAU800138
E1M10000199F02	ECO100118	P1M10000076D10	PAE201635	S1M10000040A08	SAU802137
E1M10000199A05	ECO102832	P1M10000077E04	PAE203520	S1M10000040B08	SAU802654
E1M10000199A05	ECO102833	P1M10000077H05	PAE204243	S1M10000040C08	SAU800699
E1M10000199G05	ECO103242	P1M10000077H05	PAE204244	S1M10000040D08	SAU800932
E1M10000199A06	ECO101780	P1M10000077A08	PAE203477	S1M10000040D08	SAU800931
E1M10000199C06	ECO102432	P1M10000077C08	PAE201018	S1M10000040F08	SAU802444
E1M10000199C08	ECO100115	P1M10000096F01	PAE205019	S1M10000040G08	SAU800542
E1M10000199E08	ECO103163	P1M10000096E04	PAE200352	S1M10000040H08	SAU600582
E1M10000199E08	ECO103164	P1M10000096E12	PAE204244	S1M10000040D09	SAU800453
E1M10000199C09	ECO100117	P1M10000097G05	PAE201962	S1M10000040D09	SAU200237
E1M10000199G09	ECO101256	P1M10000059B04	PAE204373	S1M10000040E09	SAU800254
E1M10000199G09	ECO202228	P1M10000059H08	PAE204024	S1M10000040F09	SAU801733
E1M10000199H09	ECO103265	P1M10000059H09	PAE204269	S1M10000040C10	SAU802496
E1M10000199B10	ECO100256	P1M10000059B10	PAE204266	S1M10000040D10	SAU801487
E1M10000199D10	ECO100013	P1M10000059B10	PAE204267	S1M10000040D10	SAU801489
E1M10000199F10	ECO100791	P1M10000059B11	PAE200933	S1M10000040E10	SAU801663
E1M10000199D11	ECO104016	P1M10000059D11	PAE204024	S1M10000040G10	SAU802654
E1M10000199E11	ECO103302	P1M10000060H02	PAE200220	S1M10000040H10	SAU802686
E1M10000199E11	ECO103303	P1M10000060E03	PAE200422	S1M10000040A11	SAU802230
E1M10000199F11	ECO101961	P1M10000060H04	PAE204471	S1M10000040B11	SAU800700
E1M10000199F11	ECO101962	P1M10000079D01	PAE201546	S1M10000040C11	SAU801264
E1M10000199F11	ECO201063	P1M10000079F06	PAE203004	S1M10000040D11	SAU801184
E1M10000199F11	ECO201472	P1M10000079F06	PAE203003	S1M10000040E11	SAU800637
E1M10000199B12	ECO100424	P1M10000079A10	PAE204574	S1M10000040E12	SAU802468
E1M10000199D12	ECO101782	P1M10000079B10	PAE204574	S1M10000040E12	SAU802467
E1M10000200G01	ECO101179	P1M10000079C10	PAE204574	S1M10000040F12	SAU800542
E1M10000200A02	ECO100549	P1M10000079D10	PAE205485	S1M10000040G12	SAU801885
E1M10000200B02	ECO101378	P1M10000080B01	PAE203863	S1M10000041G01	SAU801530
E1M10000200C02	ECO101698	P1M10000080B01	PAE103489	S1M10000041G01	SAU801529
E1M10000200A03	ECO100791	P1M10000080C01	PAE200468	S1M10000041H01	SAU800699
E1M10000200D03	ECO101136	P1M10000080E04	PAE204248	S1M10000041H01	SAU800700
E1M10000200B04	ECO100907	P1M10000080E04	PAE204249	S1M10000041B02	SAU800391
E1M10000200F04	ECO103302	P1M10000080B06	PAE204242	S1M10000041A03	SAU800354
E1M10000200C07	ECO103237	P1M10000080B06	PAE204243	S1M10000041A03	SAU302737

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000200C07	ECO103238	P1M10000080C06	PAE204248	S1M10000041B03	SAU800391
E1M10000200G07	ECO100142	P1M10000080C06	PAE204249	S1M10000041E03	SAU801515
E1M10000200D08	ECO103195	P1M10000081G05	PAE204034	S1M10000041F03	SAU801517
E1M10000200A09	ECO100886	P1M10000081H05	PAE204314	S1M10000041F03	SAU801516
E1M10000200B09	ECO100350	P1M10000081A06	PAE109190	S1M10000041H04	SAU801342
E1M10000200E10	ECO102878	P1M10000081D12	PAE203004	S1M10000041B05	SAU802233
E1M10000201G01	ECO103243	P1M10000081D12	PAE203003	S1M10000041G05	SAU802654
E1M10000201G01	ECO103244	P1M10000082A02	PAE202946	S1M10000041H05	SAU801246
E1M10000201A02	ECO101400	P1M10000082A02	PAE202947	S1M10000041B06	SAU802502
E1M10000201B02	ECO100142	P1M10000082B04	PAE203004	S1M10000041D06	SAU801089
E1M10000201C02	ECO103226	P1M10000082B04	PAE203003	S1M10000041E06	SAU800528
E1M10000201C02	ECO103227	P1M10000082A05	PAE200400	S1M10000041G06	SAU802628
E1M10000201E03	ECO103394	P1M10000082C05	PAE204244	S1M10000041B07	SAU800680
E1M10000201H03	ECO103598	P1M10000082C05	PAE204245	S1M10000041D07	SAU802649
E1M10000201D06	ECO102303	P1M10000082D05	PAE204254	S1M10000041H07	SAU800331
E1M10000201G06	ECO102336	P1M10000082E05	PAE204244	S1M10000041H07	SAU800332
E1M10000201H07	ECO101528	P1M10000082E05	PAE204245	S1M10000041C08	SAU800256
E1M10000201G08	ECO101088	P1M10000083B01	PAE204269	S1M10000041D08	SAU800506
E1M10000201F09	ECO103226	P1M10000083A11	PAE203004	S1M10000041D08	SAU800505
E1M10000201F09	ECO103227	P1M10000083A11	PAE203003	S1M10000041G08	SAU801184
E1M10000201G09	ECO103243	P1M10000083B12	PAE204266	S1M10000041H08	SAU801279
E1M10000201G09	ECO103244	P1M10000083B12	PAE204265	S1M10000041E09	SAU801018
E1M10000201H09	ECO101400	P1M10000083C12	PAE203004	S1M10000041H09	SAU802522
E1M10000201A10	ECO100142	P1M10000083C12	PAE203003	S1M10000041C10	SAU801096
E1M10000201G10	ECO102764	P1M10000084D03	PAE203004	S1M10000041D10	SAU801515
E1M10000201F12	ECO101102	P1M10000084D03	PAE203003	S1M10000041G10	SAU801630
E1M10000202C02	ECO103604	P1M10000084A04	PAE204937	S1M10000041C11	SAU801518
E1M10000202A05	ECO101480	P1M10000084E04	PAE205488	S1M10000041F11	SAU801193
E1M10000202C08	ECO101785	P1M10000084F08	PAE204269	S1M10000041G11	SAU802229
E1M10000202H08	ECO102104	P1M10000084E11	PAE202194	S1M10000041B12	SAU801310
E1M10000202C09	ECO103236	P1M10000085D06	PAE203004	S1M10000041D12	SAU802632
E1M10000202B10	ECO102814	P1M10000085D06	PAE203003	S1M10000041E12	SAU800967
E1M10000203D02	ECO104266	P1M10000086B01	PAE204155	S1M10000041F12	SAU800323
E1M10000203D02	ECO305338	P1M10000086E01	PAE109190	S1M10000041F12	SAU800324
E1M10000203G04	ECO103237	P1M10000086A02	PAE204411	S1M10000042E01	SAU800304
E1M10000203C05	ECO102878	P1M10000086D02	PAE202639	S1M10000042F01	SAU801193
E1M10000203A08	ECO102768	P1M10000086E05	PAE203004	S1M10000042G01	SAU802245
E1M10000203F09	ECO102783	P1M10000086E05	PAE203003	S1M10000042B02	SAU802464
E1M10000203F10	ECO100142	P1M10000087E04	PAE204244	S1M10000042C02	SAU800742
E1M10000203E11	ECO101069	P1M10000087E04	PAE204245	S1M10000042F02	SAU801790
E1M10000203C12	ECO101688	P1M10000087F04	PAE200141	S1M10000042B03	SAU800548
E1M10000203C12	ECO101689	P1M10000087C09	PAE202081	S1M10000042E03	SAU801113
E1M10000204E02	ECO100040	P1M10000087F09	PAE204121	S1M10000042G03	SAU801636
E1M10000204F02	ECO102815	P1M10000087F09	PAE204122	S1M10000042A04	SAU801018
E1M10000204E03	ECO103394	P1M10000087A11	PAE204266	S1M10000042D04	SAU801517
E1M10000204F03	ECO104093	P1M10000087A11	PAE204265	S1M10000042A05	SAU800001
E1M10000204B05	ECO103021	P1M10000088C04	PAE203475	S1M10000042C05	SAU802654
E1M10000204A06	ECO103264	P1M10000088A07	PAE202740	S1M10000042F05	SAU801900
E1M10000204A06	ECO103265	P1M10000088A07	PAE202739	S1M10000042H05	SAU800478
E1M10000204A07	ECO102553	P1M10000089G08	PAE202459	S1M10000042A06	SAU800367
E1M10000204G07	ECO101224	P1M10000089D11	PAE204266	S1M10000042B06	SAU801900
E1M10000204G07	ECO101225	P1M10000089D11	PAE204265	S1M10000042C06	SAU802331
E1M10000204E09	ECO103244	P1M10000090E01	PAE202632	S1M10000042E06	SAU800001

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000204D10	ECO103338	P1M10000090F06	PAE202311	S1M10000042F06	SAU802120
E1M10000204H10	ECO100549	P1M10000090F08	PAE204256	S1M10000042A07	SAU800932
E1M10000204C12	ECO101400	P1M10000090F08	PAE204257	S1M10000042A07	SAU800931
E1M10000205F02	ECO102553	P1M10000090B11	PAE203151	S1M10000042B07	SAU801698
E1M10000205G03	ECO101684	P1M10000091A09	PAE204668	S1M10000042D07	SAU800453
E1M10000205D08	ECO101752	P1M10000091E09	PAE205311	S1M10000042H07	SAU800540
E1M10000205B10	ECO100798	P1M10000091G10	PAE202740	S1M10000042B08	SAU801296
E1M10000205F11	ECO104168	P1M10000091G10	PAE202739	S1M10000042E08	SAU302611
E1M10000205G11	ECO101455	P1M10000092B02	PAE202639	S1M10000042F08	SAU801521
E1M10000205H11	ECO100848	P1M10000092B02	PAE202638	S1M10000042G08	SAU800548
E1M10000205G12	ECO101897	P1M10000092E02	PAE204254	S1M10000042A09	SAU801113
E1M10000206B03	ECO101684	P1M10000092B04	PAE200547	S1M10000042B09	SAU802229
E1M10000206B03	ECO101685	P1M10000092F05	PAE200422	S1M10000042F09	SAU801892
E1M10000206A04	ECO103230	P1M10000092F06	PAE202034	S1M10000042F09	SAU801891
E1M10000206A04	ECO103231	P1M10000092D09	PAE202126	S1M10000042G09	SAU800547
E1M10000206D04	ECO100850	P1M10000092B10	PAE204266	S1M10000042B10	SAU802244
E1M10000206D04	ECO100851	P1M10000092B10	PAE204265	S1M10000042B10	SAU802243
E1M10000206B05	ECO103116	P1M10000092B12	PAE202409	S1M10000042C10	SAU801113
E1M10000206G05	ECO103228	P1M10000093A03	PAE205083	S1M10000042D10	SAU800170
E1M10000206G05	ECO103229	P1M10000093B03	PAE203475	S1M10000042F10	SAU802247
E1M10000206H05	ECO101684	P1M10000093F03	PAE202099	S1M10000042G10	SAU802488
E1M10000206A06	ECO103263	P1M10000093H07	PAE204662	S1M10000042A11	SAU802217
E1M10000206B06	ECO103223	P1M10000093C08	PAE201867	S1M10000042B11	SAU802217
E1M10000206F06	ECO101324	P1M10000093B09	PAE203700	S1M10000042C11	SAU801419
E1M10000206C09	ECO101684	P1M10000093E09	PAE204330	S1M10000042D11	SAU802049
E1M10000206C09	ECO101685	P1M10000094H03	PAE204740	S1M10000042F11	SAU801899
E1M10000206E09	ECO100886	P1M10000094F04	PAE204266	S1M10000042H11	SAU800453
E1M10000206F09	ECO103047	P1M10000094F04	PAE204265	S1M10000042A12	SAU800453
E1M10000207E01	ECO101872	P1M10000094H04	PAE204248	S1M10000042B12	SAU801899
E1M10000207B03	ECO100850	P1M10000094H04	PAE204249	S1M10000042G12	SAU801475
E1M10000207E05	ECO100179	P1M10000094A10	PAE202179	S1M10000043B01	SAU801760
E1M10000207E05	ECO100180	P1M10000095C01	PAE202486	S1M10000043D01	SAU801630
E1M10000207G05	ECO103883	P1M10000095E04	PAE204361	S1M10000043F01	SAU802234
E1M10000207G05	ECO103884	P1M10000095G04	PAE204254	S1M10000043F01	SAU802233
E1M10000207C06	ECO102175	P1M10000095C09	PAE205438	S1M10000043G01	SAU800089
E1M10000207H06	ECO102553	P1M10000102E05	PAE200859	S1M10000043H01	SAU802234
E1M10000207H06	ECO102554	P1M10000102B07	PAE204800	S1M10000043H01	SAU802233
E1M10000207F07	ECO102556	P1M10000103B05	PAE204614	S1M10000043A02	SAU802481
E1M10000207G07	ECO104237	P1M10000103D06	PAE204259	S1M10000043B02	SAU800089
E1M10000207C10	ECO103233	P1M10000103E08	PAE205072	S1M10000043C02	SAU801089
E1M10000207C10	ECO103234	P1M10000104A02	PAE200887	S1M10000043D02	SAU800490
E1M10000207D12	ECO103230	P1M10000104H02	PAE205558	S1M10000043E02	SAU802262
E1M10000207D12	ECO103231	P1M10000104A03	PAE201694	S1M10000043A03	SAU801275
E1M10000207G12	ECO100169	P1M10000104E03	PAE202753	S1M10000043E03	SAU802331
E1M10000208A04	ECO100663	P1M10000104F07	PAE201361	S1M10000043H03	SAU802228
E1M10000208A05	ECO102158	P1M10000104D11	PAE201647	S1M10000043H03	SAU802227
E1M10000208B05	ECO103886	P1M10000105D01	PAE202225	S1M10000043A04	SAU801238
E1M10000208B06	ECO103466	P1M10000105E02	PAE200183	S1M10000043D04	SAU800543
E1M10000208B06	ECO103467	P1M10000105C03	PAE201381	S1M10000043G04	SAU800123
E1M10000208C06	ECO103220	P1M10000105G03	PAE205473	S1M10000043H04	SAU801626
E1M10000208B07	ECO100464	P1M10000105C04	PAE202400	S1M10000043H04	SAU801625
E1M10000208H07	ECO103262	P1M10000105C04	PAE108022	S1M10000043E05	SAU801755
E1M10000208H07	ECO103878	P1M10000105D04	PAE200303	S1M10000043F05	SAU801181

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000208H07	ECO204942	P1M10000105C05	PAE204953	S1M10000043G05	SAU802247
E1M10000208F08	ECO100201	P1M10000105B06	PAE200714	S1M10000043H05	SAU801007
E1M10000208H10	ECO103696	P1M10000105C08	PAE204922	S1M10000043H05	SAU801008
E1M10000208H10	ECO103697	P1M10000105H08	PAE200461	S1M10000043A06	SAU800962
E1M10000208D11	ECO103263	P1M10000105D09	PAE201694	S1M10000043H06	SAU800117
E1M10000209B01	ECO103116	P1M10000110E01	PAE200143	S1M10000043H06	SAU800116
E1M10000209F02	ECO101684	P1M10000110F01	PAE201672	S1M10000043A07	SAU800542
E1M10000209H02	ECO101307	P1M10000110G01	PAE202608	S1M10000043B07	SAU800561
E1M10000209H02	ECO202164	P1M10000110B02	PAE201949	S1M10000043C07	SAU801096
E1M10000209D05	ECO103242	P1M10000110B03	PAE202350	S1M10000043E07	SAU801193
E1M10000209E05	ECO100033	P1M10000110F03	PAE204580	S1M10000043F07	SAU800014
E1M10000209A06	ECO100632	P1M10000110G03	PAE204911	S1M10000043F07	SAU800015
E1M10000209H08	ECO103394	P1M10000110D04	PAE200095	S1M10000043A08	SAU801181
E1M10000209C10	ECO103161	P1M10000110D04	PAE200091	S1M10000043B08	SAU802207
E1M10000209G10	ECO103262	P1M10000110D04	PAE202683	S1M10000043B08	SAU802206
E1M10000209G10	ECO103878	P1M10000110D04	PAE112443	S1M10000043E08	SAU801697
E1M10000209G10	ECO204942	P1M10000110F04	PAE202015	S1M10000043F08	SAU801697
E1M10000209E11	ECO102827	P1M10000110B05	PAE202397	S1M10000043B09	SAU801475
E1M10000209E11	ECO102828	P1M10000110E05	PAE202829	S1M10000043F09	SAU802231
E1M10000209D12	ECO100116	P1M10000110B07	PAE201633	S1M10000043F09	SAU802230
E1M10000210G02	ECO103243	P1M10000110B08	PAE200425	S1M10000043G09	SAU801434
E1M10000210G02	ECO103244	P1M10000110F08	PAE204036	S1M10000043G09	SAU102585
E1M10000210F03	ECO102637	P1M10000110A09	PAE202012	S1M10000043H09	SAU802590
E1M10000210B05	ECO103886	P1M10000110E09	PAE201213	S1M10000043A10	SAU801631
E1M10000210C05	ECO103481	P1M10000110E09	PAE201214	S1M10000043B10	SAU801375
E1M10000210G05	ECO100169	P1M10000110E09	PAE106754	S1M10000043D10	SAU802655
E1M10000210E07	ECO103233	P1M10000110F09	PAE200372	S1M10000043E10	SAU801259
E1M10000210B10	ECO103481	P1M10000100F01	PAE204877	S1M10000043G10	SAU800547
E1M10000210B11	ECO101324	P1M10000098A02	PAE201862	S1M10000043H10	SAU802658
E1M10000211C02	ECO101259	P1M10000098B02	PAE204119	S1M10000043A11	SAU801631
E1M10000211E04	ECO104091	P1M10000098A03	PAE204294	S1M10000043C11	SAU801758
E1M10000211E04	ECO104092	P1M10000098A03	PAE204293	S1M10000043E11	SAU802472
E1M10000211F04	ECO102637	P1M10000098D03	PAE205430	S1M10000043H11	SAU800548
E1M10000211A05	ECO103262	P1M10000098E04	PAE204285	S1M10000043A12	SAU801354
E1M10000211A05	ECO103878	P1M10000098G04	PAE204294	S1M10000043B12	SAU800217
E1M10000211A05	ECO204942	P1M10000098G04	PAE204293	S1M10000043C12	SAU801760
E1M10000211F05	ECO101259	P1M10000098A05	PAE201101	S1M10000043D12	SAU800287
E1M10000211C06	ECO103559	P1M10000098C05	PAE203505	S1M10000043D12	SAU200106
E1M10000211C08	ECO100663	P1M10000098G06	PAE201449	S1M10000043E12	SAU800542
E1M10000211D11	ECO103243	P1M10000098H06	PAE203149	S1M10000044B01	SAU802184
E1M10000212B03	ECO103220	P1M10000098C07	PAE201694	S1M10000044B01	SAU802183
E1M10000212B03	ECO103221	P1M10000098F07	PAE200423	S1M10000044D01	SAU802250
E1M10000212D05	ECO100582	P1M10000098A08	PAE202495	S1M10000044D01	SAU802251
E1M10000212H05	ECO101994	P1M10000098G08	PAE200485	S1M10000044E01	SAU800153
E1M10000212A08	ECO103212	P1M10000098H09	PAE201357	S1M10000044A02	SAU802309
E1M10000212G12	ECO101684	P1M10000098B11	PAE203636	S1M10000044B02	SAU802273
E1M10000212G12	ECO101685	P1M10000098C12	PAE200875	S1M10000044E02	SAU801241
E1M10000213D01	ECO103885	P1M10000099D01	PAE200654	S1M10000044F02	SAU800453
E1M10000213B02	ECO100179	P1M10000099G03	PAE205031	S1M10000044F02	SAU200237
E1M10000213B02	ECO100180	P1M10000099A09	PAE200232	S1M10000044G02	SAU800367
E1M10000213C04	ECO104090	P1M10000099A10	PAE200221	S1M10000044G02	SAU800366
E1M10000213A05	ECO100095	P1M10000099E10	PAE203171	S1M10000044C04	SAU802238
E1M10000213F07	ECO104168	P1M10000099F10	PAE200423	S1M10000044D04	SAU802238

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000213G07	ECO104148	P1M10000099D11	PAE202788	S1M10000044B05	SAU600582
E1M10000213G07	ECO104149	P1M10000106D02	PAE201361	S1M10000044G05	SAU801719
E1M10000213A08	ECO100663	P1M10000106F03	PAE203413	S1M10000044H05	SAU801738
E1M10000213C08	ECO103559	P1M10000106H03	PAE200641	S1M10000044A06	SAU801089
E1M10000213C08	ECO103560	P1M10000106F04	PAE205342	S1M10000044B06	SAU802249
E1M10000213F08	ECO100465	P1M10000106D05	PAE200303	S1M10000044B06	SAU802248
E1M10000213E09	ECO103886	P1M10000106E07	PAE200221	S1M10000044C06	SAU801729
E1M10000213F09	ECO100023	P1M10000107E02	PAE204826	S1M10000044D06	SAU801617
E1M10000213G09	ECO101203	P1M10000107H02	PAE203391	S1M10000044D06	SAU801616
E1M10000213G09	ECO101204	P1M10000107C03	PAE200016	S1M10000044D06	SAU801618
E1M10000213H09	ECO104111	P1M10000107A04	PAE204223	S1M10000044E06	SAU800006
E1M10000229B01	ECO100095	P1M10000107C04	PAE203213	S1M10000044F06	SAU800545
E1M10000229D01	ECO100170	P1M10000107C09	PAE202107	S1M10000044H06	SAU801644
E1M10000229C02	ECO100464	P1M10000107C10	PAE200468	S1M10000044H06	SAU801643
E1M10000229B03	ECO102744	P1M10000107D10	PAE204622	S1M10000044C07	SAU801644
E1M10000229E03	ECO103237	P1M10000107H10	PAE204687	S1M10000044C07	SAU801643
E1M10000229E03	ECO103238	P1M10000108C01	PAE204826	S1M10000044E07	SAU800205
E1M10000229G05	ECO100886	P1M10000108A02	PAE203198	S1M10000044H07	SAU800838
E1M10000229H06	ECO100886	P1M10000108B02	PAE202587	S1M10000044A08	SAU801831
E1M10000229E08	ECO102827	P1M10000108A03	PAE200459	S1M10000044B08	SAU800542
E1M10000229E08	ECO102828	P1M10000108D04	PAE203734	S1M10000044C08	SAU801257
E1M10000229E10	ECO103878	P1M10000108G04	PAE202989	S1M10000044D08	SAU802181
E1M10000229E10	ECO204942	P1M10000108E05	PAE200008	S1M10000044F08	SAU801908
E1M10000229F10	ECO100095	P1M10000108F05	PAE201049	S1M10000044G08	SAU800251
E1M10000229C12	ECO103001	P1M10000108F06	PAE205205	S1M10000044H08	SAU801181
E1M10000229D12	ECO103221	P1M10000108G06	PAE201697	S1M10000044A09	SAU802154
E1M10000230C02	ECO103263	P1M10000109A02	PAE202364	S1M10000044D09	SAU800942
E1M10000230A03	ECO100500	P1M10000109C03	PAE201267	S1M10000044E09	SAU801237
E1M10000230A03	ECO100501	P1M10000109E03	PAE205383	S1M10000044H09	SAU801355
E1M10000230F03	ECO103263	P1M10000109D04	PAE201789	S1M10000044H09	SAU801354
E1M10000230B04	ECO101687	P1M10000109A05	PAE109011	S1M10000044D10	SAU801526
E1M10000230C04	ECO103287	P1M10000109B08	PAE202225	S1M10000044E10	SAU801342
E1M10000230E04	ECO101259	P1M10000109H09	PAE202390	S1M10000044F10	SAU802309
E1M10000230F04	ECO103481	P1M10000109E10	PAE200217	S1M10000044F10	SAU802308
E1M10000230B05	ECO102636	P1M10000109F10	PAE204909	S1M10000044G10	SAU802309
E1M10000230D05	ECO100838	P1M10000109E11	PAE203877	S1M10000044G10	SAU802308
E1M10000230H05	ECO103236	P1M10000109B12	PAE205001	S1M10000044H10	SAU801515
E1M10000230A06	ECO102555	S4M10000001C01	STM102449	S1M10000044A11	SAU802247
E1M10000230A06	ECO102556	S4M10000002G04	STM104276	S1M10000044B11	SAU801515
E1M10000230H07	ECO101684	S4M10000002B06	STM100638	S1M10000044C11	SAU802238
E1M10000230H07	ECO101685	S4M10000002G08	STM104276	S1M10000044D11	SAU801517
E1M10000230A08	ECO100448	S4M10000002B09	STM102789	S1M10000044E11	SAU801138
E1M10000230A10	ECO103228	S4M10000019H06	STM101116	S1M10000044G11	SAU801184
E1M10000230F10	ECO103237	S4M10000008H10	STM102089	S1M10000044H11	SAU800367
E1M10000230H10	ECO103224	S4M10000008H10	STM102090	S1M10000044H11	SAU800366
E1M10000230H10	ECO103225	S4M10000009E03	STM102089	S1M10000044A12	SAU802240
E1M10000230B11	ECO103461	S4M10000009E03	STM102090	S1M10000044B12	SAU801526
E1M10000230G11	ECO103886	S4M10000009C06	STM103418	S1M10000044C12	SAU802162
E1M10000230C12	ECO103228	S4M10000009E07	STM103805	S1M10000044D12	SAU800765
E1M10000231A02	ECO102637	S4M10000009G08	STM103805	S1M10000044D12	SAU800766
E1M10000231C02	ECO103886	S4M10000009B11	STM104223	S1M10000045B01	SAU802240
E1M10000231D02	ECO101259	S4M10000009B11	STM104237	S1M10000045D01	SAU801788
E1M10000231A03	ECO101227	S4M10000009F11	STM103805	S1M10000045A02	SAU801630

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000231E03	ECO102834	S4M10000009G11	STM100580	S1M10000045B02	SAU802250
E1M10000231H04	ECO101185	S4M10000010F04	STM103418	S1M10000045C02	SAU600582
E1M10000231H04	ECO101186	S4M10000010H04	STM103506	S1M10000045B03	SAU800543
E1M10000231B05	ECO103221	S4M10000010B05	STM103802	S1M10000045C03	SAU801354
E1M10000231B05	ECO103222	S4M10000010D07	STM104223	S1M10000045D03	SAU800208
E1M10000231F05	ECO103231	S4M10000010D07	STM104237	S1M10000045G03	SAU801760
E1M10000231F05	ECO103232	S4M10000010D08	STM103418	S1M10000045C04	SAU802159
E1M10000231C06	ECO103881	S4M10000010B09	STM103418	S1M10000045C04	SAU802158
E1M10000231C06	ECO103882	S4M10000010C09	STM103418	S1M10000045E04	SAU801208
E1M10000231A08	ECO103262	S4M10000010D09	STM103418	S1M10000045F04	SAU800771
E1M10000231A08	ECO103878	S4M10000010D10	STM103418	S1M10000045C05	SAU801518
E1M10000231A08	ECO204942	S4M10000011F05	STM103418	S1M10000045C05	SAU801517
E1M10000231C09	ECO102227	S4M10000011D08	STM104133	S1M10000045E05	SAU800478
E1M10000231G09	ECO103264	S4M10000011A09	STM102089	S1M10000045F05	SAU801011
E1M10000231G09	ECO103265	S4M10000011A09	STM102090	S1M10000045A06	SAU802247
E1M10000231C10	ECO102274	S4M10000011F09	STM100580	S1M10000045G06	SAU801275
E1M10000231E10	ECO104093	S4M10000011E10	STM103805	S1M10000045H06	SAU800543
E1M10000231D11	ECO103263	S4M10000011F10	STM103805	S1M10000045A07	SAU800566
E1M10000231E11	ECO103264	S4M10000011D11	STM103418	S1M10000045B07	SAU802228
E1M10000231G11	ECO100040	S4M10000012H03	STM103805	S1M10000045C07	SAU801515
E1M10000231C12	ECO103228	S4M10000012B06	STM103938	S1M10000045D07	SAU800478
E1M10000231E12	ECO103233	S4M10000012B12	STM103802	S1M10000045G07	SAU800499
E1M10000231E12	ECO103234	S4M10000013D02	STM103805	S1M10000045G07	SAU202691
E1M10000231G12	ECO101468	S4M10000013H02	STM101278	S1M10000045A08	SAU802610
E1M10000214E01	ECO101780	S4M10000014H02	STM103908	S1M10000045D08	SAU801193
E1M10000214F01	ECO104181	S4M10000014B05	STM102089	S1M10000045E08	SAU801619
E1M10000214B02	ECO100169	S4M10000014B05	STM102090	S1M10000045F08	SAU801185
E1M10000214E02	ECO104181	S4M10000014D07	STM102089	S1M10000045G08	SAU600582
E1M10000214H02	ECO103237	S4M10000014D07	STM102090	S1M10000045G08	SAU103752
E1M10000214H02	ECO103238	S4M10000015E09	STM102089	S1M10000045C09	SAU801144
E1M10000214E03	ECO101524	S4M10000015E09	STM102090	S1M10000045D09	SAU801516
E1M10000214E03	ECO101525	S4M10000015B11	STM102089	S1M10000045D09	SAU201288
E1M10000214C04	ECO102828	S4M10000015B11	STM102090	S1M10000045E09	SAU802237
E1M10000214G06	ECO103669	S4M10000016A02	STM102089	S1M10000045E09	SAU802236
E1M10000214A07	ECO103559	S4M10000016A02	STM102090	S1M10000045B10	SAU801511
E1M10000214D08	ECO100257	S4M10000020F08	STM102835	S1M10000045D10	SAU801630
E1M10000214D08	ECO101862	S4M10000021E07	STM102835	S1M10000045E10	SAU800545
E1M10000214D08	ECO104183	S4M10000022B02	STM100693	S1M10000045G10	SAU800006
E1M10000214D08	ECO103366	S4M10000022D04	STM103802	S1M10000045H10	SAU800517
E1M10000214H11	ECO104090	S4M10000022D04	STM103815	S1M10000045A11	SAU802488
E1M10000214F12	ECO104092	S4M10000022B05	STM103235	S1M10000045B11	SAU801518
E1M10000214F12	ECO104093	S4M10000022G07	STM103802	S1M10000045B11	SAU801517
E1M10000215B01	ECO103911	S4M10000022G07	STM103815	S1M10000045D11	SAU800479
E1M10000215F01	ECO103237	S4M10000022D12	STM102419	S1M10000045D11	SAU800480
E1M10000215F01	ECO103238	S4M10000022D12	STM102422	S1M10000045E11	SAU800984
E1M10000215B03	ECO104090	S4M10000022E12	STM102089	S1M10000045F11	SAU801193
E1M10000215F03	ECO102294	S4M10000022E12	STM102090	S1M10000045H11	SAU800517
E1M10000215F03	ECO102295	S4M10000024G01	STM103802	S1M10000045A12	SAU801593
E1M10000215H03	ECO103263	S4M10000024G04	STM103274	S1M10000045B12	SAU801518
E1M10000215B04	ECO102636	S4M10000024C06	STM100227	S1M10000045B12	SAU801517
E1M10000215C05	ECO103242	S4M10000024C06	STM100229	S1M10000045C12	SAU801801
E1M10000215D05	ECO101669	S4M10000024F08	STM100274	S1M10000045D12	SAU802231
E1M10000215F06	ECO104092	S4M10000024G09	STM103802	S1M10000045D12	SAU802230

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000215F06	ECO104093	S4M10000024C11	STM104223	S1M10000045E12	SAU802249
E1M10000215A07	ECO104092	S4M10000025E02	STM102366	S1M10000045F12	SAU802225
E1M10000215A07	ECO104093	S4M10000025E05	STM103802	S1M10000045G12	SAU801275
E1M10000215B07	ECO103331	S4M10000025H07	STM103274	S1M10000046B01	SAU802612
E1M10000215C07	ECO103243	S4M10000025A11	STM104223	S1M10000046D01	SAU800547
E1M10000215H07	ECO103244	S4M10000025F12	STM103805	S1M10000046E01	SAU801733
E1M10000215F08	ECO103220	S4M10000025F12	STM104686	S1M10000046F01	SAU800753
E1M10000215A09	ECO103725	S4M10000026C01	STM100693	S1M10000046G01	SAU800111
E1M10000215G09	ECO101468	S4M10000026E03	STM100274	S1M10000046H01	SAU802112
E1M10000215G09	ECO101467	S4M10000026D04	STM100637	S1M10000046H01	SAU802111
E1M10000215C10	ECO100757	S4M10000026B10	STM102089	S1M10000046C02	SAU800530
E1M10000215D10	ECO103229	S4M10000026E12	STM102089	S1M10000046D02	SAU800219
E1M10000215B12	ECO101139	S4M10000026E12	STM102090	S1M10000046E02	SAU801572
E1M10000215F12	ECO103244	S4M10000027E02	STM101923	S1M10000046F02	SAU802250
E1M10000216E01	ECO103232	S4M10000027C10	STM103802	S1M10000046F02	SAU802251
E1M10000216E01	ECO103233	S4M10000027C10	STM103815	S1M10000046G02	SAU801517
E1M10000216B02	ECO103886	S4M10000029B12	STM102089	S1M10000046A03	SAU801843
E1M10000216C02	ECO103886	S4M10000029B12	STM102090	S1M10000046B03	SAU800966
E1M10000216G02	ECO104048	S4M10000029D12	STM103274	S1M10000046D03	SAU801572
E1M10000216H02	ECO103243	S4M10000030F06	STM102011	S1M10000046G03	SAU802120
E1M10000216H02	ECO103244	S4M10000030F07	STM101116	S1M10000046A04	SAU800738
E1M10000216B03	ECO100886	S4M10000032F01	STM100693	S1M10000046A04	SAU800737
E1M10000216D03	ECO103262	S4M10000032G01	STM104223	S1M10000046B04	SAU802235
E1M10000216D03	ECO103878	S4M10000032F03	STM101955	S1M10000046B04	SAU802234
E1M10000216D03	ECO204942	S4M10000033A02	STM102366	S1M10000046C04	SAU801234
E1M10000216C04	ECO100468	S4M10000033C05	STM102089	S1M10000046D04	SAU800001
E1M10000216F04	ECO101257	S4M10000033C05	STM102090	S1M10000046E04	SAU802231
E1M10000216E05	ECO100659	S4M10000033H05	STM100637	S1M10000046E04	SAU802230
E1M10000216H05	ECO103237	S4M10000033A06	STM103247	S1M10000046G04	SAU801375
E1M10000216H05	ECO103238	S4M10000033A09	STM103802	S1M10000046B05	SAU801253
E1M10000216E07	ECO100456	S4M10000033A09	STM103815	S1M10000046C05	SAU801286
E1M10000216A09	ECO103461	S4M10000033H09	STM101115	S1M10000046D05	SAU802247
E1M10000216B10	ECO101780	S4M10000033H09	STM101116	S1M10000046F05	SAU802056
E1M10000216C11	ECO103885	S4M10000033B01	STM102401	S1M10000046A06	SAU800514
E1M10000216E11	ECO103885	S4M10000033D01	STM103938	S1M10000046C06	SAU801434
E1M10000216H11	ECO103001	S4M10000033F02	STM101116	S1M10000046F06	SAU802346
E1M10000216D12	ECO103483	S4M10000033E03	STM102089	S1M10000046B07	SAU801630
E1M10000217D02	ECO103536	S4M10000033E03	STM102090	S1M10000046C07	SAU802247
E1M10000217E02	ECO100555	S4M10000033B06	STM100866	S1M10000046C07	SAU802248
E1M10000217H02	ECO101684	S4M10000033A09	STM100723	S1M10000046E07	SAU801475
E1M10000217C04	ECO103756	S4M10000033A09	STM100724	S1M10000046G07	SAU801261
E1M10000217D06	ECO103226	S4M10000033F06	STM100723	S1M10000046A08	SAU801095
E1M10000217B07	ECO103161	S4M10000033F06	STM100724	S1M10000046B08	SAU801618
E1M10000217B08	ECO103262	S4M10000033B09	STM101116	S1M10000046C08	SAU800517
E1M10000217B08	ECO103878	S4M10000033H11	STM104223	S1M10000046D08	SAU801113
E1M10000217B08	ECO204942	S4M10000033H11	STM104237	S1M10000046E08	SAU801241
E1M10000217G10	ECO103219	S4M10000033A03	STM100541	S1M10000046F08	SAU802711
E1M10000217B11	ECO102619	S4M10000033A08	STM102401	S1M10000046A09	SAU801109
E1M10000217C11	ECO103886	S4M10000033H09	STM103180	S1M10000046B09	SAU801630
E1M10000217E11	ECO101763	S4M10000033E10	STM100866	S1M10000046D09	SAU801353
E1M10000217G11	ECO102744	S4M10000033F10	STM102366	S1M10000046F09	SAU800456
E1M10000218D01	ECO102828	S4M10000033G05	STM100137	S1M10000046G09	SAU802049
E1M10000218F01	ECO103236	S4M10000033F08	STM102419	S1M10000046D10	SAU802223

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000218F01	ECO103237	S4M10000033F08	STM102422	S1M10000046E10	SAU801241
E1M10000218A02	ECO103624	S4M10000033G09	STM102419	S1M10000046F10	SAU801760
E1M10000218A02	ECO103625	S4M10000033G09	STM102422	S1M10000046G10	SAU800545
E1M10000218D02	ECO103953	S4M10000033B10	STM102672	S1M10000046H10	SAU800543
E1M10000218G03	ECO101686	S1M10000001D01	SAU800548	S1M10000046A11	SAU800539
E1M10000218E07	ECO104092	S1M10000001F01	SAU800700	S1M10000046A11	SAU800540
E1M10000218E07	ECO104093	S1M10000001D02	SAU801152	S1M10000046B11	SAU802557
E1M10000218B08	ECO100663	S1M10000001D02	SAU801151	S1M10000046C11	SAU800219
E1M10000218H08	ECO100094	S1M10000001E02	SAU802247	S1M10000046D11	SAU800287
E1M10000218H08	ECO100095	S1M10000001F02	SAU800548	S1M10000046D11	SAU200106
E1M10000218B09	ECO103881	S1M10000001A04	SAU800209	S1M10000046A12	SAU802218
E1M10000218B09	ECO103882	S1M10000001E04	SAU802160	S1M10000046A12	SAU203799
E1M10000218C10	ECO102788	S1M10000001E04	SAU603460	S1M10000046B12	SAU801275
E1M10000218A11	ECO100095	S1M10000001F04	SAU800537	S1M10000046C12	SAU802601
E1M10000218B11	ECO103319	S1M10000001A05	SAU802398	S1M10000046D12	SAU800287
E1M10000218E11	ECO103221	S1M10000001A05	SAU802399	S1M10000046D12	SAU200106
E1M10000218E11	ECO103222	S1M10000001D06	SAU800453	S1M10000046F12	SAU801618
E1M10000218E11	ECO103223	S1M10000001D07	SAU801621	S1M10000047B01	SAU802090
E1M10000218B12	ECO103262	S1M10000001A08	SAU800005	S1M10000047C01	SAU801256
E1M10000218B12	ECO103878	S1M10000001F08	SAU800005	S1M10000047E01	SAU800547
E1M10000218B12	ECO204942	S1M10000001A09	SAU800548	S1M10000047G01	SAU800151
E1M10000218C12	ECO103265	S1M10000001E09	SAU801619	S1M10000047G01	SAU800152
E1M10000218E12	ECO100180	S1M10000001F09	SAU800548	S1M10000047B02	SAU802240
E1M10000218G12	ECO100886	S1M10000001A10	SAU802247	S1M10000047C02	SAU801253
E1M10000219C01	ECO103228	S1M10000001F10	SAU802247	S1M10000047D02	SAU802107
E1M10000219C01	ECO103229	S1M10000001G10	SAU800537	S1M10000047E02	SAU800942
E1M10000219B04	ECO102814	S1M10000001E11	SAU801481	S1M10000047F02	SAU800547
E1M10000219E05	ECO103263	S1M10000002B01	SAU802247	S1M10000047G02	SAU802244
E1M10000219F05	ECO101711	S1M10000002D01	SAU800548	S1M10000047A03	SAU800546
E1M10000219H05	ECO104286	S1M10000002E01	SAU800600	S1M10000047C03	SAU801186
E1M10000219B06	ECO103262	S1M10000002F01	SAU800543	S1M10000047D03	SAU801263
E1M10000219B06	ECO103878	S1M10000002A02	SAU802655	S1M10000047E03	SAU800018
E1M10000219B06	ECO204942	S1M10000002C02	SAU802496	S1M10000047F03	SAU801719
E1M10000219C06	ECO103100	S1M10000002D02	SAU800381	S1M10000047G03	SAU802090
E1M10000219G07	ECO103243	S1M10000002E02	SAU802506	S1M10000047H03	SAU800006
E1M10000219H07	ECO103884	S1M10000002F02	SAU802502	S1M10000047A04	SAU300619
E1M10000219A08	ECO100886	S1M10000002B03	SAU801712	S1M10000047B04	SAU800148
E1M10000219A09	ECO103161	S1M10000002D03	SAU802655	S1M10000047C04	SAU801139
E1M10000219E09	ECO100193	S1M10000002G03	SAU801740	S1M10000047D04	SAU800546
E1M10000219E09	ECO100194	S1M10000002B04	SAU800548	S1M10000047E04	SAU800528
E1M10000219A10	ECO103883	S1M10000002B05	SAU801263	S1M10000047F04	SAU300619
E1M10000219A10	ECO103884	S1M10000002D05	SAU800210	S1M10000047G04	SAU801701
E1M10000219E10	ECO104093	S1M10000002G05	SAU800548	S1M10000047H04	SAU802586
E1M10000219D11	ECO101324	S1M10000002B06	SAU800546	S1M10000047H04	SAU802585
E1M10000220B01	ECO103882	S1M10000002G06	SAU800548	S1M10000047A05	SAU802226
E1M10000220C01	ECO103882	S1M10000002B07	SAU802105	S1M10000047B05	SAU801183
E1M10000220D01	ECO100886	S1M10000002B07	SAU802106	S1M10000047C05	SAU800367
E1M10000220F01	ECO202902	S1M10000002D07	SAU801900	S1M10000047D05	SAU801139
E1M10000220F02	ECO101196	S1M10000002D07	SAU801899	S1M10000047E05	SAU802217
E1M10000220A03	ECO104091	S1M10000002E07	SAU802496	S1M10000047F05	SAU801139
E1M10000220A03	ECO104092	S1M10000002F07	SAU800283	S1M10000047G05	SAU801670
E1M10000220B03	ECO101324	S1M10000002D08	SAU801900	S1M10000047G05	SAU801669
E1M10000220F04	ECO102555	S1M10000002G08	SAU800547	S1M10000047H05	SAU800018

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000220F04	ECO102556	S1M10000002A09	SAU801113	S1M10000047A06	SAU801434
E1M10000220G04	ECO101684	S1M10000002B09	SAU802496	S1M10000047B06	SAU801186
E1M10000220B05	ECO103242	S1M10000002C09	SAU800542	S1M10000047C06	SAU802217
E1M10000220E05	ECO101257	S1M10000002E09	SAU800547	S1M10000047E06	SAU802224
E1M10000220H05	ECO100171	S1M10000002F09	SAU801481	S1M10000047F06	SAU800543
E1M10000220B06	ECO101298	S1M10000002A10	SAU802496	S1M10000047G06	SAU802244
E1M10000220D06	ECO103264	S1M10000002C10	SAU800385	S1M10000047A07	SAU802224
E1M10000220D06	ECO103265	S1M10000002G10	SAU801113	S1M10000047C07	SAU802251
E1M10000220F06	ECO103451	S1M10000002B11	SAU801475	S1M10000047D07	SAU800367
E1M10000220A08	ECO103263	S1M10000002C11	SAU800444	S1M10000047F07	SAU802247
E1M10000220C08	ECO100777	S1M10000002E11	SAU802655	S1M10000047G07	SAU802233
E1M10000220A09	ECO103884	S1M10000002A12	SAU802502	S1M10000047H07	SAU801186
E1M10000220D09	ECO103225	S1M10000002C12	SAU800966	S1M10000047A08	SAU802247
E1M10000220D09	ECO103226	S1M10000002D12	SAU800967	S1M10000047B08	SAU802223
E1M10000220G09	ECO104090	S1M10000002E12	SAU801264	S1M10000047C08	SAU802223
E1M10000220A11	ECO102744	S1M10000002F12	SAU800548	S1M10000047E08	SAU802586
E1M10000220H11	ECO103624	S1M10000002G12	SAU800548	S1M10000047E08	SAU802585
E1M10000221B01	ECO101197	S1M10000003A01	SAU802496	S1M10000047F08	SAU801719
E1M10000221E01	ECO103226	S1M10000003E01	SAU800700	S1M10000047G08	SAU800753
E1M10000221E01	ECO103227	S1M10000003A02	SAU800607	S1M10000047H08	SAU802233
E1M10000221B02	ECO103228	S1M10000003F02	SAU800548	S1M10000047A09	SAU801139
E1M10000221B02	ECO103229	S1M10000003A03	SAU800542	S1M10000047B09	SAU800942
E1M10000221F02	ECO102555	S1M10000003G03	SAU800548	S1M10000047C09	SAU801139
E1M10000221F02	ECO102556	S1M10000003A04	SAU801621	S1M10000047D09	SAU802082
E1M10000222B02	ECO101505	S1M10000003E04	SAU802247	S1M10000047E09	SAU801060
E1M10000222D02	ECO104176	S1M10000003G04	SAU802496	S1M10000047E09	SAU801061
E1M10000222D02	ECO104177	S1M10000003A05	SAU800700	S1M10000047F09	SAU800546
E1M10000222E05	ECO101849	S1M10000003F05	SAU802309	S1M10000047G09	SAU801060
E1M10000222E05	ECO101850	S1M10000003A06	SAU801904	S1M10000047G09	SAU801061
E1M10000222F05	ECO101475	S1M10000003B06	SAU800519	S1M10000047H09	SAU800367
E1M10000222F05	ECO101476	S1M10000003C06	SAU800014	S1M10000047A10	SAU801301
E1M10000222F05	ECO201962	S1M10000003D06	SAU800528	S1M10000047B10	SAU801253
E1M10000222B09	ECO102174	S1M10000003F06	SAU800547	S1M10000047D10	SAU800006
E1M10000222B10	ECO101174	S1M10000003A07	SAU800548	S1M10000047E10	SAU800543
E1M10000222C12	ECO103481	S1M10000003C07	SAU801139	S1M10000047F10	SAU800006
E1M10000222E12	ECO100652	S1M10000003E07	SAU801644	S1M10000047G10	SAU800256
E1M10000223C04	ECO103263	S1M10000003F07	SAU802506	S1M10000047H10	SAU801184
E1M10000223F04	ECO100095	S1M10000003B08	SAU800967	S1M10000047A11	SAU800942
E1M10000223H05	ECO103231	S1M10000003D08	SAU802262	S1M10000047B11	SAU802090
E1M10000223H11	ECO102802	S1M10000003A09	SAU800700	S1M10000047C11	SAU801434
E1M10000224E05	ECO103076	S1M10000003B09	SAU800824	S1M10000047E11	SAU801253
E1M10000225G01	ECO103641	S1M10000003E09	SAU800548	S1M10000047F11	SAU802226
E1M10000225A02	ECO103881	S1M10000003A10	SAU800539	S1M10000047H11	SAU800753
E1M10000225A02	ECO103882	S1M10000003C10	SAU800548	S1M10000047A12	SAU800537
E1M10000225C02	ECO103785	S1M10000003D10	SAU800122	S1M10000047B12	SAU801263
E1M10000225E02	ECO100008	S1M10000003E10	SAU801500	S1M10000047C12	SAU801263
E1M10000225E02	ECO100009	S1M10000003A11	SAU801113	S1M10000047D12	SAU801831
E1M10000225F03	ECO100435	S1M10000003E11	SAU800548	S1M10000047E12	SAU800543
E1M10000225H03	ECO101066	S1M10000003B12	SAU801434	S1M10000047F12	SAU802223
E1M10000225F04	ECO101583	S1M10000003B12	SAU302892	S1M10000048C01	SAU800753
E1M10000225A06	ECO103218	S1M10000003C12	SAU800548	S1M10000048D01	SAU802654
E1M10000225B06	ECO101259	S1M10000003F12	SAU801621	S1M10000048G01	SAU800363
E1M10000225B07	ECO103607	S1M10000004C01	SAU802655	S1M10000048H01	SAU801740

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000225E08	ECO102057	S1M10000004D01	SAU801616	S1M10000048A02	SAU800006
E1M10000225E09	ECO102878	S1M10000004D01	SAU801615	S1M10000048B02	SAU801740
E1M10000225H09	ECO101953	S1M10000004F01	SAU800966	S1M10000048C02	SAU800490
E1M10000225H09	ECO101989	S1M10000004G01	SAU802496	S1M10000048D02	SAU802548
E1M10000225F10	ECO101684	S1M10000004C02	SAU802496	S1M10000048D02	SAU104011
E1M10000225D12	ECO102966	S1M10000004F02	SAU800546	S1M10000048E02	SAU800753
E1M10000225D12	ECO102967	S1M10000004B03	SAU800257	S1M10000048F02	SAU802107
E1M10000225G12	ECO101128	S1M10000004B03	SAU800258	S1M10000048G02	SAU800019
E1M10000226E01	ECO100469	S1M10000004D03	SAU800187	S1M10000048G02	SAU800020
E1M10000226B02	ECO100683	S1M10000004E03	SAU800153	S1M10000048H02	SAU800547
E1M10000226B02	ECO103405	S1M10000004G03	SAU800016	S1M10000048A03	SAU801630
E1M10000226B02	ECO103515	S1M10000004A04	SAU802655	S1M10000048B03	SAU801184
E1M10000226B02	ECO204900	S1M10000004B04	SAU801760	S1M10000048C03	SAU802586
E1M10000226C02	ECO103030	S1M10000004D04	SAU802224	S1M10000048C03	SAU802585
E1M10000226F02	ECO102999	S1M10000004D04	SAU802223	S1M10000048E03	SAU802586
E1M10000226D03	ECO103160	S1M10000004E04	SAU802247	S1M10000048E03	SAU802585
E1M10000226G03	ECO103696	S1M10000004G05	SAU800548	S1M10000048F03	SAU802226
E1M10000226F04	ECO102508	S1M10000004A06	SAU801644	S1M10000048G03	SAU800543
E1M10000226H04	ECO100713	S1M10000004C06	SAU802714	S1M10000048H03	SAU802217
E1M10000226H06	ECO103848	S1M10000004D06	SAU800006	S1M10000048E04	SAU801183
E1M10000226A08	ECO104132	S1M10000004E06	SAU802240	S1M10000048G04	SAU802247
E1M10000226D08	ECO101753	S1M10000004F06	SAU800152	S1M10000048H04	SAU802586
E1M10000226D09	ECO100430	S1M10000004A07	SAU802503	S1M10000048H04	SAU802585
E1M10000226D09	ECO100431	S1M10000004D07	SAU802496	S1M10000048A05	SAU801263
E1M10000226B10	ECO102113	S1M10000004E07	SAU802177	S1M10000048B05	SAU800753
E1M10000226D10	ECO101623	S1M10000004E07	SAU802176	S1M10000048C05	SAU801891
E1M10000226E10	ECO102714	S1M10000004F07	SAU801683	S1M10000048F05	SAU801184
E1M10000226G11	ECO103244	S1M10000004G07	SAU801644	S1M10000048G05	SAU800542
E1M10000226B12	ECO101916	S1M10000004G07	SAU801643	S1M10000048H05	SAU800546
E1M10000226F12	ECO100240	S1M10000004B08	SAU801346	S1M10000048A06	SAU800546
E1M10000227E03	ECO100975	S1M10000004B08	SAU200535	S1M10000048B06	SAU801184
E1M10000227E03	ECO201249	S1M10000004C08	SAU802503	S1M10000048C06	SAU801670
E1M10000227G03	ECO101458	S1M10000004D08	SAU800517	S1M10000048C06	SAU801669
E1M10000227G03	ECO101459	S1M10000004D08	SAU202623	S1M10000048E06	SAU801186
E1M10000227E04	ECO104148	S1M10000004F08	SAU802224	S1M10000048A07	SAU801253
E1M10000227E04	ECO104149	S1M10000004F08	SAU802223	S1M10000048C07	SAU800018
E1M10000227H04	ECO100844	S1M10000004B09	SAU802177	S1M10000048E07	SAU801919
E1M10000227C05	ECO104164	S1M10000004B09	SAU802176	S1M10000048F07	SAU801831
E1M10000227C05	ECO104165	S1M10000004C09	SAU802496	S1M10000048G07	SAU800520
E1M10000227C07	ECO101423	S1M10000004F09	SAU802496	S1M10000048G07	SAU800519
E1M10000227G07	ECO103885	S1M10000004G09	SAU801264	S1M10000048H07	SAU800546
E1M10000227B08	ECO102736	S1M10000004C10	SAU801742	S1M10000048B08	SAU800018
E1M10000227B08	ECO102737	S1M10000004C10	SAU801741	S1M10000048C08	SAU800453
E1M10000227D08	ECO103911	S1M10000004D10	SAU801618	S1M10000048D08	SAU300619
E1M10000227B09	ECO102736	S1M10000004A11	SAU801475	S1M10000048E08	SAU802224
E1M10000227B09	ECO102737	S1M10000004B11	SAU801113	S1M10000048F08	SAU800546
E1M10000227D09	ECO103911	S1M10000004C11	SAU800700	S1M10000048H08	SAU802244
E1M10000227E11	ECO103723	S1M10000004A12	SAU801208	S1M10000048A09	SAU800547
E1M10000227E11	ECO103724	S1M10000004C12	SAU800519	S1M10000048C09	SAU800548
E1M10000227C12	ECO100394	S1M10000004D12	SAU801183	S1M10000048D09	SAU802244
E1M10000227C12	ECO100395	S1M10000004D12	SAU801184	S1M10000048E09	SAU802090
E1M10000227D12	ECO104144	S1M10000004E12	SAU800528	S1M10000048F09	SAU802238
E1M10000232H02	ECO103235	S1M10000004F12	SAU801900	S1M10000048H09	SAU800546

Clone Name	Gene LocusID	Clone Name	Gene LocusID	Clone Name	Gene LocusID
E1M10000232H02	ECO103236	S1M10000004G12	SAU801342	S1M10000048A10	SAU800006
E1M10000232A03	ECO103885	S1M10000005A01	SAU802496	S1M10000048B10	SAU800547
E1M10000232B03	ECO101324	S1M10000005C01	SAU802496	S1M10000048C10	SAU800367
E1M10000232H03	ECO103097	S1M10000005E01	SAU800996	S1M10000048D10	SAU802590
E1M10000232C07	ECO100170	S1M10000005B02	SAU802243	S1M10000048E10	SAU802590
E1M10000232F07	ECO103797	S1M10000005D02	SAU800519	S1M10000048G10	SAU802238
E1M10000232F07	ECO103798	S1M10000005E02	SAU802655	S1M10000048H10	SAU802240
E1M10000232G07	ECO104010	S1M10000005F02	SAU801644	S1M10000048A11	SAU802224
E1M10000232A08	ECO100850	S1M10000005F02	SAU801643	S1M10000048C11	SAU802217
E1M10000232G08	ECO100875	S1M10000005A03	SAU802310	S1M10000048D11	SAU802090
E1M10000232G12	ECO102636	S1M10000005D03	SAU800548	S1M10000048F11	SAU802496
E1M10000233C01	ECO103886	S1M10000005F03	SAU802262	S1M10000048G11	SAU801186
E1M10000233A03	ECO100784	S1M10000005B04	SAU801183	S1M10000048H11	SAU801139
E1M10000233B03	ECO100784	S1M10000005D04	SAU801183	S1M10000048A12	SAU801139
E1M10000233D03	ECO100118	S1M10000005D04	SAU801184	S1M10000048B12	SAU802502
E1M10000233H03	ECO103238	S1M10000005F04	SAU800363	S1M10000048D12	SAU800250
E1M10000233H03	ECO103239	S1M10000005F04	SAU800362	S1M10000048D12	SAU800249
E1M10000233C04	ECO102309	S1M10000005F04	SAU800361	S1M10000048G12	SAU802251
E1M10000233G04	ECO101185	S1M10000005C05	SAU801264		
E1M10000233A05	ECO102553	S1M10000005D05	SAU801644		

Table IC provides a cross reference between PathoSeq Gene Loci listed in Table IB and the SEQ ID NOs. of the corresponding PathoSeq polypeptides and the SEQ ID NOs. of the nucleic acids which encode them. The Gene Locus IDs provided in Table IC each comprise a nine digit alpha-numeric identifier that can be used to determine the organism from which each Gene Locus and corresponding SEQ ID NOs. were identified. Specifically, the first letter of the Gene Locus ID corresponds to the first letter of the genus name of the organism described herein from which the Gene Locus was identified and the second and third letters of the Gene Locus ID correspond to the first two letters of the species name of this organism. For example, the identifier EFA205257 describes a gene locus identified from *Enterococcus faecalis*. In those instances where the three letter identifier is the same for different organisms, the exact identity of the organism which corresponds to the Gene Locus ID can be determined by referring to the organism designation in the sequence listing for the coding nucleic acid or polypeptide SEQ ID NO. that corresponds to the particular Gene Locus ID.

TABLE IC

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6214	42398	EFA205257	18276	54460	CJU100846	30337	66521	PAE203653
6215	42399	EFA205258	18277	54461	CJU100848	30338	66522	PAE203654
6216	42400	EFA205225	18278	54462	CJU100855	30339	66523	PAE203656
6217	42401	EFA201977	18279	54463	CJU100856	30340	66524	PAE203658
6218	42402	EFA203137	18280	54464	CJU100859	30341	66525	PAE203668
6219	42403	EFA200840	18281	54465	CJU100860	30342	66526	PAE203670
6220	42404	EFA202003	18282	54466	CJU100861	30343	66527	PAE203672
6221	42405	EFA200807	18283	54467	CJU100862	30344	66528	PAE203677
6222	42406	EFA200811	18284	54468	CJU100863	30345	66529	PAE203684
6223	42407	EFA201987	18285	54469	CJU100866	30346	66530	PAE203691
6224	42408	EFA201980	18286	54470	CJU100870	30347	66531	PAE203698
6225	42409	EFA201981	18287	54471	CJU100871	30348	66532	PAE203722
6226	42410	EFA205229	18288	54472	CJU100872	30349	66533	PAE203732
6227	42411	EFA201028	18289	54473	CJU100885	30350	66534	PAE203735
6228	42412	EFA201993	18290	54474	CJU100886	30351	66535	PAE203739
6229	42413	EFA201974	18291	54475	CJU100888	30352	66536	PAE203740
6230	42414	EFA201975	18292	54476	CJU100890	30353	66537	PAE203741
6231	42415	EFA202001	18293	54477	CJU100891	30354	66538	PAE203742
6232	42416	EFA200839	18294	54478	CJU100896	30355	66539	PAE203743
6233	42417	EFA201985	18295	54479	CJU100903	30356	66540	PAE203744
6234	42418	EFA201984	18296	54480	CJU100923	30357	66541	PAE203751
6235	42419	EFA202953	18297	54481	CJU100925	30358	66542	PAE203754
6236	42420	EFA202022	18298	54482	CJU100929	30359	66543	PAE203755
6237	42421	EFA202028	18299	54483	CJU100938	30360	66544	PAE203757
6238	42422	EFA202536	18300	54484	CJU100944	30361	66545	PAE203758
6239	42423	EFA200412	18301	54485	CJU100951	30362	66546	PAE203760
6240	42424	EFA201999	18302	54486	CJU100955	30363	66547	PAE203766
6241	42425	EFA201997	18303	54487	CJU100961	30364	66548	PAE203774
6242	42426	EFA200624	18304	54488	CJU100965	30365	66549	PAE203796
6243	42427	EFA201983	18305	54489	CJU100966	30366	66550	PAE203797
6244	42428	EFA200812	18306	54490	CJU100967	30367	66551	PAE203799
6245	42429	EFA200660	18307	54491	CJU100970	30368	66552	PAE203800
6246	42430	EFA200661	18308	54492	CJU100980	30369	66553	PAE203801
6247	42431	EFA202276	18309	54493	CJU100982	30370	66554	PAE203810
6248	42432	EFA201982	18310	54494	CJU100983	30371	66555	PAE203812
6249	42433	EFA202214	18311	54495	CJU100987	30372	66556	PAE203813
6250	42434	EFA202216	18312	54496	CJU100989	30373	66557	PAE203820
6251	42435	EFA200360	18313	54497	CJU100993	30374	66558	PAE203821
6252	42436	EFA200766	18314	54498	CJU100996	30375	66559	PAE203828
6253	42437	EFA200805	18315	54499	CJU100997	30376	66560	PAE203829
6254	42438	EFA201637	18316	54500	CJU100998	30377	66561	PAE203831
6255	42439	EFA201986	18317	54501	CJU100999	30378	66562	PAE203850
6256	42440	EFA205255	18318	54502	CJU101006	30379	66563	PAE203869
6257	42441	EFA200495	18319	54503	CJU101007	30380	66564	PAE203871
6258	42442	EFA104836	18320	54504	CJU101011	30381	66565	PAE203872
6259	42443	EFA201976	18321	54505	CJU101017	30382	66566	PAE203887
6260	42444	EFA201523	18322	54506	CJU101021	30383	66567	PAE203888
6261	42445	EFA202012	18323	54507	CJU101022	30384	66568	PAE203892
6262	42446	EFA202007	18324	54508	CJU101027	30385	66569	PAE203897
6263	42447	EFA200307	18325	54509	CJU101028	30386	66570	PAE203898
6264	42448	EFA201888	18326	54510	CJU101029	30387	66571	PAE203900
6265	42449	EFA205285	18327	54511	CJU101031	30388	66572	PAE203911

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6266	42450	EFA200842	18328	54512	CJU101042	30389	66573	PAE203912
6267	42451	EFA201204	18329	54513	CJU101044	30390	66574	PAE203917
6268	42452	EFA201611	18330	54514	CJU101046	30391	66575	PAE203920
6269	42453	EFA201946	18331	54515	CJU101050	30392	66576	PAE203943
6270	42454	EFA201512	18332	54516	CJU101054	30393	66577	PAE203958
6271	42455	EFA205288	18333	54517	CJU101059	30394	66578	PAE203967
6272	42456	EFA203140	18334	54518	CJU101065	30395	66579	PAE203973
6273	42457	EFA200544	18335	54519	CJU101068	30396	66580	PAE203980
6274	42458	EFA203904	18336	54520	CJU101072	30397	66581	PAE203984
6275	42459	EFA202006	18337	54521	CJU101074	30398	66582	PAE203993
6276	42460	EFA202298	18338	54522	CJU101075	30399	66583	PAE204001
6277	42461	EFA200326	18339	54523	CJU101080	30400	66584	PAE204004
6278	42462	EFA200662	18340	54524	CJU101081	30401	66585	PAE204008
6279	42463	EFA202217	18341	54525	CJU101082	30402	66586	PAE204019
6280	42464	EFA201869	18342	54526	CJU101094	30403	66587	PAE204027
6281	42465	EFA203598	18343	54527	CJU101100	30404	66588	PAE204031
6282	42466	EFA200894	18344	54528	CJU101103	30405	66589	PAE204040
6283	42467	EFA200613	18345	54529	CJU101106	30406	66590	PAE204042
6284	42468	EFA202166	18346	54530	CJU101107	30407	66591	PAE204048
6285	42469	EFA202168	18347	54531	CJU101113	30408	66592	PAE204049
6286	42470	EFA201087	18348	54532	CJU101117	30409	66593	PAE204050
6287	42471	EFA201084	18349	54533	CJU101119	30410	66594	PAE204051
6288	42472	EFA201883	18350	54534	CJU101120	30411	66595	PAE204052
6289	42473	EFA201905	18351	54535	CJU101121	30412	66596	PAE204053
6290	42474	EFA202015	18352	54536	CJU101122	30413	66597	PAE204077
6291	42475	EFA202274	18353	54537	CJU101125	30414	66598	PAE204079
6292	42476	EFA200916	18354	54538	CJU101127	30415	66599	PAE204081
6293	42477	EFA200179	18355	54539	CJU101129	30416	66600	PAE204082
6294	42478	EFA200358	18356	54540	CJU101130	30417	66601	PAE204094
6295	42479	EFA200747	18357	54541	CJU101131	30418	66602	PAE204095
6296	42480	EFA200746	18358	54542	CJU101133	30419	66603	PAE204110
6297	42481	EFA201379	18359	54543	CJU101134	30420	66604	PAE204125
6298	42482	EFA201163	18360	54544	CJU101140	30421	66605	PAE204133
6299	42483	EFA202160	18361	54545	CJU101143	30422	66606	PAE204135
6300	42484	EFA200457	18362	54546	CJU101146	30423	66607	PAE204150
6301	42485	EFA202177	18363	54547	CJU101147	30424	66608	PAE204156
6302	42486	EFA202176	18364	54548	CJU101149	30425	66609	PAE204164
6303	42487	EFA200562	18365	54549	CJU101152	30426	66610	PAE204177
6304	42488	EFA200192	18366	54550	CJU101153	30427	66611	PAE204198
6305	42489	EFA202180	18367	54551	CJU101154	30428	66612	PAE204199
6306	42490	EFA201749	18368	54552	CJU101159	30429	66613	PAE204210
6307	42491	EFA203429	18369	54553	CJU101166	30430	66614	PAE204226
6308	42492	EFA202378	18370	54554	CJU101173	30431	66615	PAE204230
6309	42493	EFA202013	18371	54555	CJU101174	30432	66616	PAE204232
6310	42494	EFA202200	18372	54556	CJU101178	30433	66617	PAE204236
6311	42495	EFA203606	18373	54557	CJU101182	30434	66618	PAE204237
6312	42496	EFA203607	18374	54558	CJU101186	30435	66619	PAE204238
6313	42497	EFA201926	18375	54559	CJU101188	30436	66620	PAE204239
6314	42498	EFA201460	18376	54560	CJU101194	30437	66621	PAE204240
6315	42499	EFA200538	18377	54561	CJU101195	30438	66622	PAE204258
6316	42500	EFA201867	18378	54562	CJU101196	30439	66623	PAE204263
6317	42501	EFA200245	18379	54563	CJU101197	30440	66624	PAE204264
6318	42502	EFA200246	18380	54564	CJU101199	30441	66625	PAE204268
6319	42503	EFA200478	18381	54565	CJU101207	30442	66626	PAE204271
6320	42504	EFA201375	18382	54566	CJU101210	30443	66627	PAE204274

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6321	42505	EFA200421	18383	54567	CJU101212	30444	66628	PAE204275
6322	42506	EFA200454	18384	54568	CJU101214	30445	66629	PAE204279
6323	42507	EFA202182	18385	54569	CJU101215	30446	66630	PAE204280
6324	42508	EFA204646	18386	54570	CJU101217	30447	66631	PAE204281
6325	42509	EFA200240	18387	54571	CJU101231	30448	66632	PAE204282
6326	42510	EFA201884	18388	54572	CJU101238	30449	66633	PAE204284
6327	42511	EFA200677	18389	54573	CJU101268	30450	66634	PAE204290
6328	42512	EFA200418	18390	54574	CJU101271	30451	66635	PAE204312
6329	42513	EFA201920	18391	54575	CJU101273	30452	66636	PAE204327
6330	42514	EFA200357	18392	54576	CJU101276	30453	66637	PAE204332
6331	42515	EFA200359	18393	54577	CJU101278	30454	66638	PAE204352
6332	42516	EFA201041	18394	54578	CJU101290	30455	66639	PAE204357
6333	42517	EFA201801	18395	54579	CJU101295	30456	66640	PAE204359
6334	42518	EFA202631	18396	54580	CJU101298	30457	66641	PAE204374
6335	42519	EFA201886	18397	54581	CJU101309	30458	66642	PAE204383
6336	42520	EFA200674	18398	54582	CJU101319	30459	66643	PAE204399
6337	42521	EFA202110	18399	54583	CJU101321	30460	66644	PAE204401
6338	42522	EFA201009	18400	54584	CJU101322	30461	66645	PAE204402
6339	42523	EFA201878	18401	54585	CJU101325	30462	66646	PAE204404
6340	42524	EFA201208	18402	54586	CJU101328	30463	66647	PAE204405
6341	42525	EFA202296	18403	54587	CJU101334	30464	66648	PAE204406
6342	42526	EFA201699	18404	54588	CJU101358	30465	66649	PAE204407
6343	42527	EFA200310	18405	54589	CJU101360	30466	66650	PAE204409
6344	42528	EFA200317	18406	54590	CJU101363	30467	66651	PAE204410
6345	42529	EFA200958	18407	54591	CJU101364	30468	66652	PAE204412
6346	42530	EFA201457	18408	54592	CJU101365	30469	66653	PAE204413
6347	42531	EFA201433	18409	54593	CJU101371	30470	66654	PAE204414
6348	42532	EFA200698	18410	54594	CJU101372	30471	66655	PAE204415
6349	42533	EFA200699	18411	54595	CJU101373	30472	66656	PAE204416
6350	42534	EFA201978	18412	54596	CJU101376	30473	66657	PAE204418
6351	42535	EFA200515	18413	54597	CJU101390	30474	66658	PAE204419
6352	42536	EFA201155	18414	54598	CJU101395	30475	66659	PAE204420
6353	42537	EFA202213	18415	54599	CJU101396	30476	66660	PAE204426
6354	42538	EFA200794	18416	54600	CJU101409	30477	66661	PAE204430
6355	42539	EFA201047	18417	54601	CJU101410	30478	66662	PAE204437
6356	42540	EFA201979	18418	54602	CJU101414	30479	66663	PAE204439
6357	42541	EFA201025	18419	54603	CJU101426	30480	66664	PAE204442
6358	42542	EFA200841	18420	54604	CJU101433	30481	66665	PAE204447
6359	42543	EFA201970	18421	54605	CJU101443	30482	66666	PAE204448
6360	42544	EFA200621	18422	54606	CJU101444	30483	66667	PAE204455
6361	42545	EFA202170	18423	54607	CJU101445	30484	66668	PAE204463
6362	42546	EFA201601	18424	54608	CJU101446	30485	66669	PAE204474
6363	42547	EFA201165	18425	54609	CJU101450	30486	66670	PAE204479
6364	42548	EFA200239	18426	54610	CJU101457	30487	66671	PAE204480
6365	42549	EFA201507	18427	54611	CJU101458	30488	66672	PAE204481
6366	42550	EFA205207	18428	54612	CJU101462	30489	66673	PAE204482
6367	42551	EFA203246	18429	54613	CJU101467	30490	66674	PAE204487
6368	42552	EFA201827	18430	54614	CJU101474	30491	66675	PAE204494
6369	42553	EFA200590	18431	54615	CJU101489	30492	66676	PAE204498
6370	42554	EFA202223	18432	54616	CJU101490	30493	66677	PAE204501
6371	42555	EFA201124	18433	54617	CJU101496	30494	66678	PAE204539
6372	42556	EFA201122	18434	54618	CJU101497	30495	66679	PAE204558
6373	42557	EFA203061	18435	54619	CJU101498	30496	66680	PAE204559
6374	42558	EFA200290	18436	54620	CJU101499	30497	66681	PAE204560
6375	42559	EFA200309	18437	54621	CJU101500	30498	66682	PAE204561

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6376	42560	EFA200733	18438	54622	CJU101501	30499	66683	PAE204564
6377	42561	EFA202136	18439	54623	CJU101502	30500	66684	PAE204565
6378	42562	EFA200195	18440	54624	CJU101503	30501	66685	PAE204566
6379	42563	EFA201951	18441	54625	CJU101513	30502	66686	PAE204567
6380	42564	EFA202174	18442	54626	CJU101517	30503	66687	PAE204586
6381	42565	EFA202221	18443	54627	CJU101518	30504	66688	PAE204593
6382	42566	EFA201401	18444	54628	CJU101521	30505	66689	PAE204599
6383	42567	EFA202115	18445	54629	CJU101523	30506	66690	PAE204600
6384	42568	EFA201506	18446	54630	CJU101528	30507	66691	PAE204602
6385	42569	EFA200829	18447	54631	CJU101530	30508	66692	PAE204603
6386	42570	EFA200400	18448	54632	CJU101531	30509	66693	PAE204604
6387	42571	EFA204122	18449	54633	CJU101536	30510	66694	PAE204607
6388	42572	EFA203071	18450	54634	CJU101537	30511	66695	PAE204623
6389	42573	EFA200247	18451	54635	CJU101540	30512	66696	PAE204625
6390	42574	EFA201826	18452	54636	CJU101544	30513	66697	PAE204643
6391	42575	EFA200381	18453	54637	CJU101547	30514	66698	PAE204653
6392	42576	EFA200382	18454	54638	CJU101548	30515	66699	PAE204659
6393	42577	EFA200797	18455	54639	CJU101550	30516	66700	PAE204660
6394	42578	EFA202211	18456	54640	CJU101551	30517	66701	PAE204661
6395	42579	EFA201645	18457	54641	CJU101558	30518	66702	PAE204663
6396	42580	EFA201646	18458	54642	CJU101563	30519	66703	PAE204667
6397	42581	EFA200366	18459	54643	CJU101565	30520	66704	PAE204670
6398	42582	EFA200731	18460	54644	CJU101577	30521	66705	PAE204684
6399	42583	EFA202608	18461	54645	CJU101578	30522	66706	PAE204690
6400	42584	EFA201968	18462	54646	CJU101581	30523	66707	PAE204691
6401	42585	EFA201312	18463	54647	CJU101583	30524	66708	PAE204692
6402	42586	EFA201954	18464	54648	CJU101587	30525	66709	PAE204696
6403	42587	EFA200266	18465	54649	CJU101589	30526	66710	PAE204703
6404	42588	EFA200198	18466	54650	CJU101590	30527	66711	PAE204711
6405	42589	EFA200898	18467	54651	CJU101592	30528	66712	PAE204719
6406	42590	ECO100023	18468	54652	CJU101593	30529	66713	PAE204720
6407	42591	ECO100702	18469	54653	CJU101594	30530	66714	PAE204723
6408	42592	ECO101256	18470	54654	CJU101595	30531	66715	PAE204724
6409	42593	ECO202228	18471	54655	CJU101596	30532	66716	PAE204725
6410	42594	ECO101324	18472	54656	CJU101597	30533	66717	PAE204728
6411	42595	ECO304472	18473	54657	CJU101598	30534	66718	PAE204729
6412	42596	ECO102309	18474	54658	CJU101599	30535	66719	PAE204734
6413	42597	ECO102636	18475	54659	CJU101600	30536	66720	PAE204736
6414	42598	ECO102557	18476	54660	CJU101601	30537	66721	PAE204737
6415	42599	ECO103884	18477	54661	CJU101602	30538	66722	PAE204738
6416	42600	ECO100148	18478	54662	CJU101603	30539	66723	PAE204741
6417	42601	ECO103240	18479	54663	CJU101604	30540	66724	PAE204745
6418	42602	ECO103241	18480	54664	CJU101605	30541	66725	PAE204746
6419	42603	ECO103394	18481	54665	CJU101606	30542	66726	PAE204747
6420	42604	ECO101485	18482	54666	CJU101607	30543	66727	PAE204752
6421	42605	ECO102255	18483	54667	CJU101608	30544	66728	PAE204754
6422	42606	ECO102144	18484	54668	CJU101609	30545	66729	PAE204755
6423	42607	ECO103911	18485	54669	CJU101610	30546	66730	PAE204757
6424	42608	ECO103264	18486	54670	CJU101611	30547	66731	PAE204764
6425	42609	ECO103265	18487	54671	CJU101612	30548	66732	PAE204765
6426	42610	ECO101995	18488	54672	CJU101613	30549	66733	PAE204781
6427	42611	ECO101104	18489	54673	CJU101614	30550	66734	PAE204805
6428	42612	ECO103263	18490	54674	CJU101615	30551	66735	PAE204820
6429	42613	ECO102033	18491	54675	CJU101619	30552	66736	PAE204828
6430	42614	ECO102986	18492	54676	CJU101621	30553	66737	PAE204830

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6431	42615	ECO102562	18493	54677	CPN100014	30554	66738	PAE204831
6432	42616	ECO101506	18494	54678	CPN100430	30555	66739	PAE204842
6433	42617	ECO100488	18495	54679	CPN100431	30556	66740	PAE204843
6434	42618	ECO100490	18496	54680	CPN100432	30557	66741	PAE204847
6435	42619	ECO100491	18497	54681	CPN100435	30558	66742	PAE204860
6436	42620	ECO102513	18498	54682	CPN100682	30559	66743	PAE204863
6437	42621	ECO100366	18499	54683	CPN100816	30560	66744	PAE204868
6438	42622	ECO100367	18500	54684	CPN200001	30561	66745	PAE204881
6439	42623	ECO101111	18501	54685	CPN200011	30562	66746	PAE204887
6440	42624	ECO101475	18502	54686	CPN200012	30563	66747	PAE204888
6441	42625	ECO101476	18503	54687	CPN200013	30564	66748	PAE204903
6442	42626	ECO201962	18504	54688	CPN200015	30565	66749	PAE204914
6443	42627	ECO103461	18505	54689	CPN200024	30566	66750	PAE204915
6444	42628	ECO101328	18506	54690	CPN200025	30567	66751	PAE204918
6445	42629	ECO101329	18507	54691	CPN200031	30568	66752	PAE204923
6446	42630	ECO103059	18508	54692	CPN200033	30569	66753	PAE204925
6447	42631	ECO102857	18509	54693	CPN200043	30570	66754	PAE204926
6448	42632	ECO101763	18510	54694	CPN200044	30571	66755	PAE204927
6449	42633	ECO101764	18511	54695	CPN200045	30572	66756	PAE204929
6450	42634	ECO101765	18512	54696	CPN200046	30573	66757	PAE204930
6451	42635	ECO100703	18513	54697	CPN200047	30574	66758	PAE204933
6452	42636	ECO102842	18514	54698	CPN200048	30575	66759	PAE204941
6453	42637	ECO104277	18515	54699	CPN200053	30576	66760	PAE204942
6454	42638	ECO103479	18516	54700	CPN200056	30577	66761	PAE204955
6455	42639	ECO103478	18517	54701	CPN200062	30578	66762	PAE204959
6456	42640	ECO101686	18518	54702	CPN200065	30579	66763	PAE204962
6457	42641	ECO101041	18519	54703	CPN200066	30580	66764	PAE204964
6458	42642	ECO101086	18520	54704	CPN200071	30581	66765	PAE204965
6459	42643	ECO103228	18521	54705	CPN200079	30582	66766	PAE204975
6460	42644	ECO101370	18522	54706	CPN200082	30583	66767	PAE204976
6461	42645	ECO103423	18523	54707	CPN200083	30584	66768	PAE204977
6462	42646	ECO100139	18524	54708	CPN200085	30585	66769	PAE204991
6463	42647	ECO100523	18525	54709	CPN200090	30586	66770	PAE205006
6464	42648	ECO102827	18526	54710	CPN200091	30587	66771	PAE205008
6465	42649	ECO102828	18527	54711	CPN200092	30588	66772	PAE205011
6466	42650	ECO100390	18528	54712	CPN200093	30589	66773	PAE205014
6467	42651	ECO101932	18529	54713	CPN200094	30590	66774	PAE205017
6468	42652	ECO103292	18530	54714	CPN200095	30591	66775	PAE205030
6469	42653	ECO103293	18531	54715	CPN200098	30592	66776	PAE205040
6470	42654	ECO101685	18532	54716	CPN200099	30593	66777	PAE205046
6471	42655	ECO103692	18533	54717	CPN200100	30594	66778	PAE205048
6472	42656	ECO102227	18534	54718	CPN200101	30595	66779	PAE205058
6473	42657	ECO103242	18535	54719	CPN200102	30596	66780	PAE205070
6474	42658	ECO103243	18536	54720	CPN200103	30597	66781	PAE205081
6475	42659	ECO100541	18537	54721	CPN200104	30598	66782	PAE205082
6476	42660	ECO103227	18538	54722	CPN200105	30599	66783	PAE205092
6477	42661	ECO103928	18539	54723	CPN200107	30600	66784	PAE205093
6478	42662	ECO103238	18540	54724	CPN200108	30601	66785	PAE205095
6479	42663	ECO101161	18541	54725	CPN200109	30602	66786	PAE205112
6480	42664	ECO102104	18542	54726	CPN200110	30603	66787	PAE205114
6481	42665	ECO103224	18543	54727	CPN200111	30604	66788	PAE205116
6482	42666	ECO102087	18544	54728	CPN200112	30605	66789	PAE205119
6483	42667	ECO101347	18545	54729	CPN200113	30606	66790	PAE205122
6484	42668	ECO101348	18546	54730	CPN200114	30607	66791	PAE205124
6485	42669	ECO102929	18547	54731	CPN200115	30608	66792	PAE205125

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6486	42670	ECO102928	18548	54732	CPN200116	30609	66793	PAE205130
6487	42671	ECO104168	18549	54733	CPN200117	30610	66794	PAE205141
6488	42672	ECO102588	18550	54734	CPN200118	30611	66795	PAE205144
6489	42673	ECO102556	18551	54735	CPN200119	30612	66796	PAE205148
6490	42674	ECO100500	18552	54736	CPN200120	30613	66797	PAE205162
6491	42675	ECO100501	18553	54737	CPN200121	30614	66798	PAE205167
6492	42676	ECO104010	18554	54738	CPN200123	30615	66799	PAE205168
6493	42677	ECO103230	18555	54739	CPN200128	30616	66800	PAE205173
6494	42678	ECO103231	18556	54740	CPN200129	30617	66801	PAE205178
6495	42679	ECO103217	18557	54741	CPN200131	30618	66802	PAE205187
6496	42680	ECO103736	18558	54742	CPN200133	30619	66803	PAE205190
6497	42681	ECO102035	18559	54743	CPN200135	30620	66804	PAE205196
6498	42682	ECO104157	18560	54744	CPN200137	30621	66805	PAE205200
6499	42683	ECO101796	18561	54745	CPN200150	30622	66806	PAE205208
6500	42684	ECO104237	18562	54746	CPN200152	30623	66807	PAE205210
6501	42685	ECO103239	18563	54747	CPN200161	30624	66808	PAE205216
6502	42686	ECO103613	18564	54748	CPN200162	30625	66809	PAE205223
6503	42687	ECO103624	18565	54749	CPN200166	30626	66810	PAE205225
6504	42688	ECO103625	18566	54750	CPN200167	30627	66811	PAE205231
6505	42689	ECO103777	18567	54751	CPN200175	30628	66812	PAE205234
6506	42690	ECO103218	18568	54752	CPN200176	30629	66813	PAE205238
6507	42691	ECO103163	18569	54753	CPN200177	30630	66814	PAE205244
6508	42692	ECO302213	18570	54754	CPN200178	30631	66815	PAE205248
6509	42693	ECO100184	18571	54755	CPN200179	30632	66816	PAE205255
6510	42694	ECO103234	18572	54756	CPN200180	30633	66817	PAE205256
6511	42695	ECO103235	18573	54757	CPN200184	30634	66818	PAE205257
6512	42696	ECO103266	18574	54758	CPN200187	30635	66819	PAE205258
6513	42697	ECO301060	18575	54759	CPN200197	30636	66820	PAE205275
6514	42698	ECO101689	18576	54760	CPN200198	30637	66821	PAE205276
6515	42699	ECO103226	18577	54761	CPN200199	30638	66822	PAE205291
6516	42700	ECO100298	18578	54762	CPN200200	30639	66823	PAE205292
6517	42701	ECO102706	18579	54763	CPN200202	30640	66824	PAE205310
6518	42702	ECO102705	18580	54764	CPN200203	30641	66825	PAE205314
6519	42703	ECO103543	18581	54765	CPN200204	30642	66826	PAE205326
6520	42704	ECO103164	18582	54766	CPN200205	30643	66827	PAE205330
6521	42705	ECO101468	18583	54767	CPN200209	30644	66828	PAE205333
6522	42706	ECO100158	18584	54768	CPN200217	30645	66829	PAE205357
6523	42707	ECO102065	18585	54769	CPN200218	30646	66830	PAE205358
6524	42708	ECO102201	18586	54770	CPN200219	30647	66831	PAE205361
6525	42709	ECO103626	18587	54771	CPN200221	30648	66832	PAE205366
6526	42710	ECO100645	18588	54772	CPN200222	30649	66833	PAE205367
6527	42711	ECO103766	18589	54773	CPN200223	30650	66834	PAE205391
6528	42712	ECO104081	18590	54774	CPN200229	30651	66835	PAE205406
6529	42713	ECO103233	18591	54775	CPN200235	30652	66836	PAE205419
6530	42714	ECO100502	18592	54776	CPN200241	30653	66837	PAE205422
6531	42715	ECO101583	18593	54777	CPN200248	30654	66838	PAE205434
6532	42716	ECO103232	18594	54778	CPN200251	30655	66839	PAE205435
6533	42717	ECO100852	18595	54779	CPN200256	30656	66840	PAE205468
6534	42718	ECO100741	18596	54780	CPN200265	30657	66841	PAE205479
6535	42719	ECO102763	18597	54781	CPN200268	30658	66842	PAE205481
6536	42720	ECO103932	18598	54782	CPN200269	30659	66843	PAE205499
6537	42721	ECO103451	18599	54783	CPN200310	30660	66844	PAE205500
6538	42722	ECO102141	18600	54784	CPN200311	30661	66845	PAE205513
6539	42723	ECO103658	18601	54785	CPN200324	30662	66846	PAE205520
6540	42724	ECO103659	18602	54786	CPN200328	30663	66847	PAE205534

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6541	42725	ECO103566	18603	54787	CPN200330	30664	66848	PAE205544
6542	42726	ECO100662	18604	54788	CPN200331	30665	66849	PAE205547
6543	42727	ECO102788	18605	54789	CPN200332	30666	66850	PAE205551
6544	42728	ECO103807	18606	54790	CPN200333	30667	66851	PAE205552
6545	42729	ECO103885	18607	54791	CPN200335	30668	66852	PAE205553
6546	42730	ECO100256	18608	54792	CPN200336	30669	66853	PAE205554
6547	42731	ECO103515	18609	54793	CPN200343	30670	66854	PAE205555
6548	42732	ECO102787	18610	54794	CPN200344	30671	66855	PAE205559
6549	42733	ECO102310	18611	54795	CPN200348	30672	66856	PAE205560
6550	42734	ECO101480	18612	54796	CPN200361	30673	66857	PAE205563
6551	42735	ECO102819	18613	54797	CPN200363	30674	66858	PAE205564
6552	42736	ECO100135	18614	54798	CPN200364	30675	66859	PAE205565
6553	42737	ECO100136	18615	54799	CPN200367	30676	66860	PMU100003
6554	42738	ECO100140	18616	54800	CPN200372	30677	66861	PMU100004
6555	42739	ECO101684	18617	54801	CPN200377	30678	66862	PMU100006
6556	42740	ECO102303	18618	54802	CPN200382	30679	66863	PMU100019
6557	42741	ECO100236	18619	54803	CPN200392	30680	66864	PMU100031
6558	42742	ECO101994	18620	54804	CPN200393	30681	66865	PMU100032
6559	42743	ECO100850	18621	54805	CPN200407	30682	66866	PMU100034
6560	42744	ECO202902	18622	54806	CPN200413	30683	66867	PMU100036
6561	42745	ECO103054	18623	54807	CPN200415	30684	66868	PMU100037
6562	42746	ECO103528	18624	54808	CPN200424	30685	66869	PMU100041
6563	42747	ECO102880	18625	54809	CPN200429	30686	66870	PMU100043
6564	42748	ECO102847	18626	54810	CPN200430	30687	66871	PMU100045
6565	42749	ECO103408	18627	54811	CPN200431	30688	66872	PMU100060
6566	42750	ECO103237	18628	54812	CPN200432	30689	66873	PMU100062
6567	42751	ECO103780	18629	54813	CPN200434	30690	66874	PMU100069
6568	42752	ECO102470	18630	54814	CPN200435	30691	66875	PMU100071
6569	42753	ECO104019	18631	54815	CPN200436	30692	66876	PMU100079
6570	42754	ECO103646	18632	54816	CPN200439	30693	66877	PMU100093
6571	42755	ECO101084	18633	54817	CPN200442	30694	66878	PMU100098
6572	42756	ECO103572	18634	54818	CPN200448	30695	66879	PMU100105
6573	42757	ECO102335	18635	54819	CPN200450	30696	66880	PMU100112
6574	42758	ECO102764	18636	54820	CPN200453	30697	66881	PMU100113
6575	42759	ECO103710	18637	54821	CPN200454	30698	66882	PMU100114
6576	42760	ECO102950	18638	54822	CPN200455	30699	66883	PMU100115
6577	42761	ECO102949	18639	54823	CPN200456	30700	66884	PMU100117
6578	42762	ECO103159	18640	54824	CPN200457	30701	66885	PMU100119
6579	42763	ECO101436	18641	54825	CPN200459	30702	66886	PMU100124
6580	42764	ECO101822	18642	54826	CPN200460	30703	66887	PMU100125
6581	42765	ECO103671	18643	54827	CPN200466	30704	66888	PMU100128
6582	42766	ECO103672	18644	54828	CPN200469	30705	66889	PMU100129
6583	42767	ECO101945	18645	54829	CPN200470	30706	66890	PMU100131
6584	42768	ECO100473	18646	54830	CPN200472	30707	66891	PMU100133
6585	42769	ECO102783	18647	54831	CPN200473	30708	66892	PMU100134
6586	42770	ECO103221	18648	54832	CPN200477	30709	66893	PMU100136
6587	42771	ECO103222	18649	54833	CPN200478	30710	66894	PMU100137
6588	42772	ECO102690	18650	54834	CPN200479	30711	66895	PMU100138
6589	42773	ECO101712	18651	54835	CPN200483	30712	66896	PMU100139
6590	42774	ECO103960	18652	54836	CPN200500	30713	66897	PMU100140
6591	42775	ECO103220	18653	54837	CPN200501	30714	66898	PMU100141
6592	42776	ECO100262	18654	54838	CPN200505	30715	66899	PMU100142
6593	42777	ECO103422	18655	54839	CPN200506	30716	66900	PMU100143
6594	42778	ECO102507	18656	54840	CPN200508	30717	66901	PMU100144
6595	42779	ECO102749	18657	54841	CPN200514	30718	66902	PMU100145

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6596	42780	ECO103223	18658	54842	CPN200515	30719	66903	PMU100146
6597	42781	ECO103544	18659	54843	CPN200516	30720	66904	PMU100147
6598	42782	ECO102885	18660	54844	CPN200522	30721	66905	PMU100148
6599	42783	ECO101343	18661	54845	CPN200536	30722	66906	PMU100153
6600	42784	ECO104167	18662	54846	CPN200562	30723	66907	PMU100154
6601	42785	ECO101675	18663	54847	CPN200570	30724	66908	PMU100156
6602	42786	ECO100663	18664	54848	CPN200574	30725	66909	PMU100162
6603	42787	ECO103527	18665	54849	CPN200575	30726	66910	PMU100163
6604	42788	ECO100811	18666	54850	CPN200587	30727	66911	PMU100168
6605	42789	ECO100593	18667	54851	CPN200599	30728	66912	PMU100169
6606	42790	ECO101257	18668	54852	CPN200606	30729	66913	PMU100171
6607	42791	ECO101365	18669	54853	CPN200612	30730	66914	PMU100180
6608	42792	ECO101366	18670	54854	CPN200617	30731	66915	PMU100181
6609	42793	ECO104214	18671	54855	CPN200626	30732	66916	PMU100182
6610	42794	ECO102177	18672	54856	CPN200638	30733	66917	PMU100185
6611	42795	ECO104091	18673	54857	CPN200639	30734	66918	PMU100189
6612	42796	ECO104092	18674	54858	CPN200642	30735	66919	PMU100190
6613	42797	ECO102210	18675	54859	CPN200643	30736	66920	PMU100191
6614	42798	ECO101261	18676	54860	CPN200644	30737	66921	PMU100192
6615	42799	ECO103878	18677	54861	CPN200645	30738	66922	PMU100194
6616	42800	ECO204942	18678	54862	CPN200646	30739	66923	PMU100195
6617	42801	ECO102604	18679	54863	CPN200648	30740	66924	PMU100202
6618	42802	ECO103930	18680	54864	CPN200649	30741	66925	PMU100204
6619	42803	ECO103959	18681	54865	CPN200652	30742	66926	PMU100205
6620	42804	ECO100001	18682	54866	CPN200653	30743	66927	PMU100206
6621	42805	ECO100002	18683	54867	CPN200660	30744	66928	PMU100207
6622	42806	ECO101207	18684	54868	CPN200665	30745	66929	PMU100211
6623	42807	ECO103176	18685	54869	CPN200666	30746	66930	PMU100217
6624	42808	ECO103175	18686	54870	CPN200667	30747	66931	PMU100220
6625	42809	ECO102186	18687	54871	CPN200668	30748	66932	PMU100225
6626	42810	ECO103370	18688	54872	CPN200676	30749	66933	PMU100229
6627	42811	ECO102301	18689	54873	CPN200680	30750	66934	PMU100232
6628	42812	ECO103698	18690	54874	CPN200681	30751	66935	PMU100233
6629	42813	ECO103468	18691	54875	CPN200682	30752	66936	PMU100236
6630	42814	ECO101060	18692	54876	CPN200683	30753	66937	PMU100237
6631	42815	ECO100183	18693	54877	CPN200684	30754	66938	PMU100240
6632	42816	ECO100499	18694	54878	CPN200685	30755	66939	PMU100243
6633	42817	ECO102324	18695	54879	CPN200686	30756	66940	PMU100244
6634	42818	ECO102325	18696	54880	CPN200687	30757	66941	PMU100247
6635	42819	ECO100619	18697	54881	CPN200688	30758	66942	PMU100249
6636	42820	ECO100554	18698	54882	CPN200689	30759	66943	PMU100251
6637	42821	ECO100956	18699	54883	CPN200690	30760	66944	PMU100252
6638	42822	ECO100791	18700	54884	CPN200703	30761	66945	PMU100255
6639	42823	ECO101698	18701	54885	CPN200705	30762	66946	PMU100257
6640	42824	ECO100836	18702	54886	CPN200707	30763	66947	PMU100258
6641	42825	ECO103832	18703	54887	CPN200710	30764	66948	PMU100260
6642	42826	ECO103833	18704	54888	CPN200711	30765	66949	PMU100261
6643	42827	ECO104243	18705	54889	CPN200721	30766	66950	PMU100265
6644	42828	ECO100315	18706	54890	CPN200723	30767	66951	PMU100275
6645	42829	ECO103372	18707	54891	CPN200724	30768	66952	PMU100276
6646	42830	ECO102832	18708	54892	CPN200725	30769	66953	PMU100277
6647	42831	ECO102833	18709	54893	CPN200726	30770	66954	PMU100281
6648	42832	ECO104105	18710	54894	CPN200731	30771	66955	PMU100284
6649	42833	ECO100968	18711	54895	CPN200733	30772	66956	PMU100288
6650	42834	ECO100661	18712	54896	CPN200737	30773	66957	PMU100289

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6651	42835	ECO102839	18713	54897	CPN200741	30774	66958	PMU100292
6652	42836	ECO100886	18714	54898	CPN200747	30775	66959	PMU100293
6653	42837	ECO103298	18715	54899	CPN200756	30776	66960	PMU100301
6654	42838	ECO100799	18716	54900	CPN200757	30777	66961	PMU100303
6655	42839	ECO104132	18717	54901	CPN200758	30778	66962	PMU100317
6656	42840	ECO205205	18718	54902	CPN200766	30779	66963	PMU100319
6657	42841	ECO103318	18719	54903	CPN200772	30780	66964	PMU100324
6658	42842	ECO103781	18720	54904	CPN200776	30781	66965	PMU100328
6659	42843	ECO102340	18721	54905	CPN200789	30782	66966	PMU100329
6660	42844	ECO102075	18722	54906	CPN200790	30783	66967	PMU100331
6661	42845	ECO103580	18723	54907	CPN200792	30784	66968	PMU100333
6662	42846	ECO104026	18724	54908	CPN200793	30785	66969	PMU100339
6663	42847	ECO100409	18725	54909	CPN200794	30786	66970	PMU100344
6664	42848	ECO101752	18726	54910	CPN200796	30787	66971	PMU100346
6665	42849	ECO101753	18727	54911	CPN200800	30788	66972	PMU100347
6666	42850	ECO100851	18728	54912	CPN200802	30789	66973	PMU100348
6667	42851	ECO102641	18729	54913	CPN200806	30790	66974	PMU100351
6668	42852	ECO101940	18730	54914	CPN200812	30791	66975	PMU100354
6669	42853	ECO302775	18731	54915	CPN200813	30792	66976	PMU100355
6670	42854	ECO100996	18732	54916	CPN200824	30793	66977	PMU100358
6671	42855	ECO100997	18733	54917	CPN200827	30794	66978	PMU100359
6672	42856	ECO103883	18734	54918	CPN200838	30795	66979	PMU100364
6673	42857	ECO100809	18735	54919	CPN200839	30796	66980	PMU100365
6674	42858	ECO100810	18736	54920	CPN200841	30797	66981	PMU100369
6675	42859	ECO104036	18737	54921	CPN200842	30798	66982	PMU100370
6676	42860	ECO102722	18738	54922	CPN200846	30799	66983	PMU100376
6677	42861	ECO102040	18739	54923	CPN200847	30800	66984	PMU100379
6678	42862	ECO101498	18740	54924	CPN200848	30801	66985	PMU100388
6679	42863	ECO201937	18741	54925	CPN200849	30802	66986	PMU100389
6680	42864	ECO101088	18742	54926	CPN200850	30803	66987	PMU100392
6681	42865	ECO102990	18743	54927	CPN200851	30804	66988	PMU100405
6682	42866	ECO100798	18744	54928	CPN200855	30805	66989	PMU100411
6683	42867	ECO101525	18745	54929	CPN200856	30806	66990	PMU100412
6684	42868	ECO101526	18746	54930	CPN200861	30807	66991	PMU100413
6685	42869	ECO103943	18747	54931	CPN200869	30808	66992	PMU100414
6686	42870	ECO104090	18748	54932	CPN200871	30809	66993	PMU100416
6687	42871	ECO101679	18749	54933	CPN200876	30810	66994	PMU100425
6688	42872	ECO103049	18750	54934	CPN200877	30811	66995	PMU100433
6689	42873	ECO101780	18751	54935	CPN200879	30812	66996	PMU100435
6690	42874	ECO101637	18752	54936	CPN200887	30813	66997	PMU100438
6691	42875	ECO101406	18753	54937	CPN200889	30814	66998	PMU100439
6692	42876	ECO100153	18754	54938	CPN200890	30815	66999	PMU100440
6693	42877	ECO100113	18755	54939	CPN200891	30816	67000	PMU100444
6694	42878	ECO101700	18756	54940	CPN200893	30817	67001	PMU100448
6695	42879	ECO100167	18757	54941	CPN200894	30818	67002	PMU100453
6696	42880	ECO103160	18758	54942	CPN200895	30819	67003	PMU100455
6697	42881	ECO103161	18759	54943	CPN200896	30820	67004	PMU100456
6698	42882	ECO103064	18760	54944	CPN200902	30821	67005	PMU100460
6699	42883	ECO102056	18761	54945	CPN200903	30822	67006	PMU100463
6700	42884	ECO100974	18762	54946	CPN200907	30823	67007	PMU100465
6701	42885	ECO103523	18763	54947	CPN200908	30824	67008	PMU100466
6702	42886	ECO100102	18764	54948	CPN200909	30825	67009	PMU100483
6703	42887	ECO101882	18765	54949	CPN200910	30826	67010	PMU100486
6704	42888	ECO102259	18766	54950	CPN200914	30827	67011	PMU100513
6705	42889	ECO102136	18767	54951	CPN200915	30828	67012	PMU100517

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6706	42890	ECO103357	18768	54952	CPN200930	30829	67013	PMU100520
6707	42891	ECO100430	18769	54953	CPN200933	30830	67014	PMU100521
6708	42892	ECO100431	18770	54954	CPN200938	30831	67015	PMU100522
6709	42893	ECO104093	18771	54955	CPN200944	30832	67016	PMU100528
6710	42894	ECO103912	18772	54956	CPN200945	30833	67017	PMU100532
6711	42895	ECO103873	18773	54957	CPN200946	30834	67018	PMU100533
6712	42896	ECO100118	18774	54958	CPN200948	30835	67019	PMU100538
6713	42897	ECO102432	18775	54959	CPN200949	30836	67020	PMU100542
6714	42898	ECO100115	18776	54960	CPN200950	30837	67021	PMU100547
6715	42899	ECO100117	18777	54961	CPN200952	30838	67022	PMU100548
6716	42900	ECO100013	18778	54962	CPN200955	30839	67023	PMU100551
6717	42901	ECO104016	18779	54963	CPN200956	30840	67024	PMU100555
6718	42902	ECO103302	18780	54964	CPN200957	30841	67025	PMU100556
6719	42903	ECO103303	18781	54965	CPN200958	30842	67026	PMU100558
6720	42904	ECO101961	18782	54966	CPN200966	30843	67027	PMU100560
6721	42905	ECO101962	18783	54967	CPN200970	30844	67028	PMU100566
6722	42906	ECO201063	18784	54968	CPN200977	30845	67029	PMU100578
6723	42907	ECO201472	18785	54969	CPN200978	30846	67030	PMU100580
6724	42908	ECO100424	18786	54970	CPN200979	30847	67031	PMU100581
6725	42909	ECO101782	18787	54971	CPN200980	30848	67032	PMU100591
6726	42910	ECO101179	18788	54972	CPN200982	30849	67033	PMU100593
6727	42911	ECO100549	18789	54973	CPN200986	30850	67034	PMU100600
6728	42912	ECO101378	18790	54974	CPN200994	30851	67035	PMU100602
6729	42913	ECO101136	18791	54975	CPN200995	30852	67036	PMU100603
6730	42914	ECO100907	18792	54976	CPN201000	30853	67037	PMU100604
6731	42915	ECO100142	18793	54977	CPN201004	30854	67038	PMU100609
6732	42916	ECO103195	18794	54978	CPN201005	30855	67039	PMU100611
6733	42917	ECO100350	18795	54979	CPN201006	30856	67040	PMU100612
6734	42918	ECO102878	18796	54980	CPN201009	30857	67041	PMU100615
6735	42919	ECO103244	18797	54981	CPN201012	30858	67042	PMU100616
6736	42920	ECO101400	18798	54982	CPN201014	30859	67043	PMU100618
6737	42921	ECO103598	18799	54983	CPN201018	30860	67044	PMU100625
6738	42922	ECO102336	18800	54984	CPN201019	30861	67045	PMU100626
6739	42923	ECO101528	18801	54985	CPN201040	30862	67046	PMU100629
6740	42924	ECO101102	18802	54986	CPN201041	30863	67047	PMU100631
6741	42925	ECO103604	18803	54987	CPN201044	30864	67048	PMU100634
6742	42926	ECO101785	18804	54988	CPN201045	30865	67049	PMU100636
6743	42927	ECO103236	18805	54989	CPN201046	30866	67050	PMU100637
6744	42928	ECO102814	18806	54990	CPN201047	30867	67051	PMU100639
6745	42929	ECO104266	18807	54991	CPN201050	30868	67052	PMU100643
6746	42930	ECO305338	18808	54992	CPN201052	30869	67053	PMU100644
6747	42931	ECO102768	18809	54993	CPN201063	30870	67054	PMU100645
6748	42932	ECO101069	18810	54994	CPN201066	30871	67055	PMU100650
6749	42933	ECO101688	18811	54995	CPN201070	30872	67056	PMU100653
6750	42934	ECO100040	18812	54996	CPN201075	30873	67057	PMU100658
6751	42935	ECO102815	18813	54997	CPN201078	30874	67058	PMU100661
6752	42936	ECO103021	18814	54998	CPN201081	30875	67059	PMU100672
6753	42937	ECO102553	18815	54999	CPN201084	30876	67060	PMU100676
6754	42938	ECO101224	18816	55000	CPN201085	30877	67061	PMU100681
6755	42939	ECO101225	18817	55001	CPN201090	30878	67062	PMU100683
6756	42940	ECO103338	18818	55002	CPN201091	30879	67063	PMU100684
6757	42941	ECO101455	18819	55003	CPN201094	30880	67064	PMU100688
6758	42942	ECO100848	18820	55004	CPN201095	30881	67065	PMU100692
6759	42943	ECO101897	18821	55005	CPN201097	30882	67066	PMU100694
6760	42944	ECO103116	18822	55006	CPN201099	30883	67067	PMU100695

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6761	42945	ECO103229	18823	55007	CPN201105	30884	67068	PMU100703
6762	42946	ECO103047	18824	55008	CPN201106	30885	67069	PMU100705
6763	42947	ECO101872	18825	55009	CPN300253	30886	67070	PMU100714
6764	42948	ECO100179	18826	55010	CPN300392	30887	67071	PMU100716
6765	42949	ECO100180	18827	55011	CPN300572	30888	67072	PMU100717
6766	42950	ECO102175	18828	55012	CTR100036	30889	67073	PMU100719
6767	42951	ECO102554	18829	55013	CTR100067	30890	67074	PMU100720
6768	42952	ECO100169	18830	55014	CTR100083	30891	67075	PMU100722
6769	42953	ECO102158	18831	55015	CTR100183	30892	67076	PMU100726
6770	42954	ECO103886	18832	55016	CTR100201	30893	67077	PMU100729
6771	42955	ECO103466	18833	55017	CTR100305	30894	67078	PMU100730
6772	42956	ECO103467	18834	55018	CTR100382	30895	67079	PMU100731
6773	42957	ECO100464	18835	55019	CTR100444	30896	67080	PMU100734
6774	42958	ECO103262	18836	55020	CTR100467	30897	67081	PMU100736
6775	42959	ECO100201	18837	55021	CTR100501	30898	67082	PMU100742
6776	42960	ECO103696	18838	55022	CTR100525	30899	67083	PMU100744
6777	42961	ECO103697	18839	55023	CTR100599	30900	67084	PMU100749
6778	42962	ECO101307	18840	55024	CTR100655	30901	67085	PMU100753
6779	42963	ECO202164	18841	55025	CTR100660	30902	67086	PMU100755
6780	42964	ECO100033	18842	55026	CTR100723	30903	67087	PMU100756
6781	42965	ECO100632	18843	55027	CTR100786	30904	67088	PMU100759
6782	42966	ECO100116	18844	55028	CTR100845	30905	67089	PMU100760
6783	42967	ECO102637	18845	55029	CTR100922	30906	67090	PMU100762
6784	42968	ECO103481	18846	55030	CTR100959	30907	67091	PMU100764
6785	42969	ECO101259	18847	55031	CTR100972	30908	67092	PMU100765
6786	42970	ECO103559	18848	55032	CTR100991	30909	67093	PMU100774
6787	42971	ECO100582	18849	55033	CTR101070	30910	67094	PMU100776
6788	42972	ECO103212	18850	55034	CTR101134	30911	67095	PMU100777
6789	42973	ECO100095	18851	55035	CTR200001	30912	67096	PMU100781
6790	42974	ECO104148	18852	55036	CTR200007	30913	67097	PMU100783
6791	42975	ECO104149	18853	55037	CTR200012	30914	67098	PMU100795
6792	42976	ECO103560	18854	55038	CTR200013	30915	67099	PMU100801
6793	42977	ECO100465	18855	55039	CTR200018	30916	67100	PMU100802
6794	42978	ECO101203	18856	55040	CTR200019	30917	67101	PMU100804
6795	42979	ECO101204	18857	55041	CTR200025	30918	67102	PMU100808
6796	42980	ECO104111	18858	55042	CTR200030	30919	67103	PMU100816
6797	42981	ECO100170	18859	55043	CTR200033	30920	67104	PMU100817
6798	42982	ECO102744	18860	55044	CTR200035	30921	67105	PMU100818
6799	42983	ECO103001	18861	55045	CTR200045	30922	67106	PMU100822
6800	42984	ECO101687	18862	55046	CTR200046	30923	67107	PMU100829
6801	42985	ECO103287	18863	55047	CTR200047	30924	67108	PMU100834
6802	42986	ECO100838	18864	55048	CTR200048	30925	67109	PMU100835
6803	42987	ECO102555	18865	55049	CTR200049	30926	67110	PMU100841
6804	42988	ECO100448	18866	55050	CTR200050	30927	67111	PMU100842
6805	42989	ECO103225	18867	55051	CTR200051	30928	67112	PMU100856
6806	42990	ECO101227	18868	55052	CTR200055	30929	67113	PMU100861
6807	42991	ECO102834	18869	55053	CTR200057	30930	67114	PMU100863
6808	42992	ECO101185	18870	55054	CTR200061	30931	67115	PMU100864
6809	42993	ECO101186	18871	55055	CTR200062	30932	67116	PMU100865
6810	42994	ECO103881	18872	55056	CTR200064	30933	67117	PMU100869
6811	42995	ECO103882	18873	55057	CTR200065	30934	67118	PMU100870
6812	42996	ECO102274	18874	55058	CTR200070	30935	67119	PMU100873
6813	42997	ECO104181	18875	55059	CTR200074	30936	67120	PMU100874
6814	42998	ECO101524	18876	55060	CTR200076	30937	67121	PMU100875
6815	42999	ECO103669	18877	55061	CTR200077	30938	67122	PMU100876

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6816	43000	ECO100257	18878	55062	CTR200078	30939	67123	PMU100877
6817	43001	ECO101862	18879	55063	CTR200082	30940	67124	PMU100884
6818	43002	ECO104183	18880	55064	CTR200087	30941	67125	PMU100887
6819	43003	ECO103366	18881	55065	CTR200088	30942	67126	PMU100893
6820	43004	ECO102294	18882	55066	CTR200096	30943	67127	PMU100894
6821	43005	ECO102295	18883	55067	CTR200100	30944	67128	PMU100897
6822	43006	ECO101669	18884	55068	CTR200102	30945	67129	PMU100898
6823	43007	ECO103331	18885	55069	CTR200103	30946	67130	PMU100903
6824	43008	ECO103725	18886	55070	CTR200104	30947	67131	PMU100904
6825	43009	ECO101467	18887	55071	CTR200105	30948	67132	PMU100915
6826	43010	ECO100757	18888	55072	CTR200112	30949	67133	PMU100917
6827	43011	ECO101139	18889	55073	CTR200114	30950	67134	PMU100920
6828	43012	ECO104048	18890	55074	CTR200116	30951	67135	PMU100924
6829	43013	ECO100468	18891	55075	CTR200123	30952	67136	PMU100936
6830	43014	ECO100659	18892	55076	CTR200124	30953	67137	PMU100938
6831	43015	ECO100456	18893	55077	CTR200126	30954	67138	PMU100941
6832	43016	ECO103483	18894	55078	CTR200127	30955	67139	PMU100945
6833	43017	ECO103536	18895	55079	CTR200130	30956	67140	PMU100948
6834	43018	ECO100555	18896	55080	CTR200132	30957	67141	PMU100949
6835	43019	ECO103756	18897	55081	CTR200133	30958	67142	PMU100950
6836	43020	ECO103219	18898	55082	CTR200134	30959	67143	PMU100956
6837	43021	ECO102619	18899	55083	CTR200136	30960	67144	PMU100958
6838	43022	ECO103953	18900	55084	CTR200137	30961	67145	PMU100968
6839	43023	ECO100094	18901	55085	CTR200138	30962	67146	PMU100974
6840	43024	ECO103319	18902	55086	CTR200146	30963	67147	PMU100983
6841	43025	ECO101711	18903	55087	CTR200158	30964	67148	PMU100985
6842	43026	ECO104286	18904	55088	CTR200159	30965	67149	PMU100990
6843	43027	ECO103100	18905	55089	CTR200162	30966	67150	PMU100995
6844	43028	ECO100193	18906	55090	CTR200163	30967	67151	PMU100998
6845	43029	ECO100194	18907	55091	CTR200164	30968	67152	PMU101002
6846	43030	ECO101196	18908	55092	CTR200165	30969	67153	PMU101007
6847	43031	ECO100171	18909	55093	CTR200169	30970	67154	PMU101009
6848	43032	ECO101298	18910	55094	CTR200170	30971	67155	PMU101010
6849	43033	ECO100777	18911	55095	CTR200173	30972	67156	PMU101011
6850	43034	ECO101197	18912	55096	CTR200175	30973	67157	PMU101015
6851	43035	ECO101505	18913	55097	CTR200177	30974	67158	PMU101019
6852	43036	ECO104176	18914	55098	CTR200179	30975	67159	PMU101024
6853	43037	ECO104177	18915	55099	CTR200180	30976	67160	PMU101027
6854	43038	ECO101849	18916	55100	CTR200181	30977	67161	PMU101031
6855	43039	ECO101850	18917	55101	CTR200185	30978	67162	PMU101032
6856	43040	ECO102174	18918	55102	CTR200197	30979	67163	PMU101033
6857	43041	ECO101174	18919	55103	CTR200198	30980	67164	PMU101039
6858	43042	ECO100652	18920	55104	CTR200202	30981	67165	PMU101041
6859	43043	ECO102802	18921	55105	CTR200204	30982	67166	PMU101043
6860	43044	ECO103076	18922	55106	CTR200205	30983	67167	PMU101056
6861	43045	ECO103641	18923	55107	CTR200209	30984	67168	PMU101059
6862	43046	ECO103785	18924	55108	CTR200210	30985	67169	PMU101062
6863	43047	ECO100008	18925	55109	CTR200213	30986	67170	PMU101063
6864	43048	ECO100009	18926	55110	CTR200214	30987	67171	PMU101065
6865	43049	ECO100435	18927	55111	CTR200216	30988	67172	PMU101067
6866	43050	ECO101066	18928	55112	CTR200217	30989	67173	PMU101068
6867	43051	ECO103607	18929	55113	CTR200218	30990	67174	PMU101069
6868	43052	ECO102057	18930	55114	CTR200219	30991	67175	PMU101070
6869	43053	ECO101953	18931	55115	CTR200223	30992	67176	PMU101074
6870	43054	ECO101989	18932	55116	CTR200224	30993	67177	PMU101085

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6871	43055	ECO102966	18933	55117	CTR200225	30994	67178	PMU101087
6872	43056	ECO102967	18934	55118	CTR200226	30995	67179	PMU101089
6873	43057	ECO101128	18935	55119	CTR200236	30996	67180	PMU101091
6874	43058	ECO100469	18936	55120	CTR200240	30997	67181	PMU101092
6875	43059	ECO100683	18937	55121	CTR200250	30998	67182	PMU101098
6876	43060	ECO103405	18938	55122	CTR200265	30999	67183	PMU101100
6877	43061	ECO204900	18939	55123	CTR200266	31000	67184	PMU101102
6878	43062	ECO103030	18940	55124	CTR200267	31001	67185	PMU101104
6879	43063	ECO102999	18941	55125	CTR200272	31002	67186	PMU101107
6880	43064	ECO102508	18942	55126	CTR200280	31003	67187	PMU101112
6881	43065	ECO100713	18943	55127	CTR200283	31004	67188	PMU101114
6882	43066	ECO103848	18944	55128	CTR200284	31005	67189	PMU101115
6883	43067	ECO102113	18945	55129	CTR200286	31006	67190	PMU101120
6884	43068	ECO101623	18946	55130	CTR200287	31007	67191	PMU101132
6885	43069	ECO102714	18947	55131	CTR200289	31008	67192	PMU101134
6886	43070	ECO101916	18948	55132	CTR200290	31009	67193	PMU101140
6887	43071	ECO100240	18949	55133	CTR200291	31010	67194	PMU101145
6888	43072	ECO100975	18950	55134	CTR200292	31011	67195	PMU101148
6889	43073	ECO201249	18951	55135	CTR200293	31012	67196	PMU101150
6890	43074	ECO101458	18952	55136	CTR200296	31013	67197	PMU101151
6891	43075	ECO101459	18953	55137	CTR200297	31014	67198	PMU101152
6892	43076	ECO100844	18954	55138	CTR200307	31015	67199	PMU101160
6893	43077	ECO104164	18955	55139	CTR200309	31016	67200	PMU101161
6894	43078	ECO104165	18956	55140	CTR200310	31017	67201	PMU101162
6895	43079	ECO101423	18957	55141	CTR200313	31018	67202	PMU101163
6896	43080	ECO102736	18958	55142	CTR200319	31019	67203	PMU101165
6897	43081	ECO102737	18959	55143	CTR200322	31020	67204	PMU101166
6898	43082	ECO103723	18960	55144	CTR200327	31021	67205	PMU101170
6899	43083	ECO103724	18961	55145	CTR200328	31022	67206	PMU101172
6900	43084	ECO100394	18962	55146	CTR200330	31023	67207	PMU101173
6901	43085	ECO100395	18963	55147	CTR200334	31024	67208	PMU101175
6902	43086	ECO104144	18964	55148	CTR200341	31025	67209	PMU101177
6903	43087	ECO103097	18965	55149	CTR200342	31026	67210	PMU101178
6904	43088	ECO103797	18966	55150	CTR200355	31027	67211	PMU101179
6905	43089	ECO103798	18967	55151	CTR200360	31028	67212	PMU101180
6906	43090	ECO100875	18968	55152	CTR200361	31029	67213	PMU101183
6907	43091	ECO100784	18969	55153	CTR200362	31030	67214	PMU101184
6908	43092	ECO103185	18970	55154	CTR200363	31031	67215	PMU101193
6909	43093	ECO103181	18971	55155	CTR200365	31032	67216	PMU101195
6910	43094	ECO103844	18972	55156	CTR200366	31033	67217	PMU101197
6911	43095	ECO103055	18973	55157	CTR200367	31034	67218	PMU101209
6912	43096	ECO100876	18974	55158	CTR200370	31035	67219	PMU101214
6913	43097	ECO102233	18975	55159	CTR200373	31036	67220	PMU101219
6914	43098	ECO101848	18976	55160	CTR200374	31037	67221	PMU101230
6915	43099	ECO103482	18977	55161	CTR200380	31038	67222	PMU101232
6916	43100	ECO102299	18978	55162	CTR200383	31039	67223	PMU101233
6917	43101	ECO102655	18979	55163	CTR200393	31040	67224	PMU101234
6918	43102	ECO103186	18980	55164	CTR200394	31041	67225	PMU101235
6919	43103	ECO103510	18981	55165	CTR200395	31042	67226	PMU101236
6920	43104	ECO103182	18982	55166	CTR200396	31043	67227	PMU101238
6921	43105	ECO101355	18983	55167	CTR200398	31044	67228	PMU101239
6922	43106	ECO101830	18984	55168	CTR200408	31045	67229	PMU101240
6923	43107	ECO102267	18985	55169	CTR200416	31046	67230	PMU101241
6924	43108	ECO103216	18986	55170	CTR200421	31047	67231	PMU101242
6925	43109	ECO101844	18987	55171	CTR200422	31048	67232	PMU101260

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6926	43110	ECO102060	18988	55172	CTR200435	31049	67233	PMU101262
6927	43111	ECO102061	18989	55173	CTR200448	31050	67234	PMU101264
6928	43112	ECO103514	18990	55174	CTR200449	31051	67235	PMU101271
6929	43113	ECO101939	18991	55175	CTR200450	31052	67236	PMU101272
6930	43114	ECO104147	18992	55176	CTR200453	31053	67237	PMU101275
6931	43115	ECO100195	18993	55177	CTR200454	31054	67238	PMU101284
6932	43116	ECO101628	18994	55178	CTR200455	31055	67239	PMU101285
6933	43117	ECO102213	18995	55179	CTR200458	31056	67240	PMU101287
6934	43118	ECO104242	18996	55180	CTR200459	31057	67241	PMU101288
6935	43119	ECO104187	18997	55181	CTR200463	31058	67242	PMU101289
6936	43120	ECO102425	18998	55182	CTR200472	31059	67243	PMU101290
6937	43121	ECO100198	18999	55183	CTR200474	31060	67244	PMU101296
6938	43122	ECO101258	19000	55184	CTR200480	31061	67245	PMU101297
6939	43123	ECO101232	19001	55185	CTR200481	31062	67246	PMU101298
6940	43124	ECO101233	19002	55186	CTR200500	31063	67247	PMU101336
6941	43125	ECO101834	19003	55187	CTR200501	31064	67248	PMU101339
6942	43126	ECO102593	19004	55188	CTR200502	31065	67249	PMU101343
6943	43127	ECO101089	19005	55189	CTR200503	31066	67250	PMU101347
6944	43128	ECO102610	19006	55190	CTR200504	31067	67251	PMU101354
6945	43129	ECO101048	19007	55191	CTR200507	31068	67252	PMU101355
6946	43130	ECO100245	19008	55192	CTR200515	31069	67253	PMU101356
6947	43131	ECO102512	19009	55193	CTR200519	31070	67254	PMU101357
6948	43132	ECO102277	19010	55194	CTR200520	31071	67255	PMU101361
6949	43133	ECO102278	19011	55195	CTR200528	31072	67256	PMU101364
6950	43134	ECO101714	19012	55196	CTR200529	31073	67257	PMU101370
6951	43135	ECO102922	19013	55197	CTR200531	31074	67258	PMU101371
6952	43136	ECO101575	19014	55198	CTR200532	31075	67259	PMU101373
6953	43137	ECO101152	19015	55199	CTR200533	31076	67260	PMU101380
6954	43138	ECO101153	19016	55200	CTR200535	31077	67261	PMU101381
6955	43139	ECO103488	19017	55201	CTR200537	31078	67262	PMU101385
6956	43140	ECO100404	19018	55202	CTR200540	31079	67263	PMU101389
6957	43141	ECO102669	19019	55203	CTR200551	31080	67264	PMU101390
6958	43142	ECO101987	19020	55204	CTR200552	31081	67265	PMU101391
6959	43143	ECO100453	19021	55205	CTR200556	31082	67266	PMU101392
6960	43144	ECO101372	19022	55206	CTR200558	31083	67267	PMU101393
6961	43145	ECO101067	19023	55207	CTR200560	31084	67268	PMU101394
6962	43146	ECO103074	19024	55208	CTR200563	31085	67269	PMU101395
6963	43147	ECO103075	19025	55209	CTR200564	31086	67270	PMU101396
6964	43148	ECO101184	19026	55210	CTR200567	31087	67271	PMU101397
6965	43149	ECO102253	19027	55211	CTR200568	31088	67272	PMU101398
6966	43150	ECO102091	19028	55212	CTR200579	31089	67273	PMU101399
6967	43151	ECO100672	19029	55213	CTR200580	31090	67274	PMU101400
6968	43152	ECO101656	19030	55214	CTR200581	31091	67275	PMU101401
6969	43153	ECO101855	19031	55215	CTR200582	31092	67276	PMU101402
6970	43154	ECO100560	19032	55216	CTR200583	31093	67277	PMU101403
6971	43155	ECO100557	19033	55217	CTR200584	31094	67278	PMU101404
6972	43156	ECO103452	19034	55218	CTR200585	31095	67279	PMU101405
6973	43157	ECO100885	19035	55219	CTR200586	31096	67280	PMU101406
6974	43158	ECO103462	19036	55220	CTR200587	31097	67281	PMU101407
6975	43159	ECO101183	19037	55221	CTR200588	31098	67282	PMU101408
6976	43160	ECO101381	19038	55222	CTR200589	31099	67283	PMU101409
6977	43161	ECO100068	19039	55223	CTR200595	31100	67284	PMU101410
6978	43162	ECO100069	19040	55224	CTR200597	31101	67285	PMU101411
6979	43163	ECO100668	19041	55225	CTR200601	31102	67286	PMU101412
6980	43164	ECO100669	19042	55226	CTR200602	31103	67287	PMU101413

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
6981	43165	ECO103929	19043	55227	CTR200603	31104	67288	PMU101414
6982	43166	ECO100239	19044	55228	CTR200604	31105	67289	PMU101415
6983	43167	ECO100362	19045	55229	CTR200605	31106	67290	PMU101416
6984	43168	ECO102327	19046	55230	CTR200606	31107	67291	PMU101418
6985	43169	ECO103376	19047	55231	CTR200608	31108	67292	PMU101422
6986	43170	ECO103494	19048	55232	CTR200610	31109	67293	PMU101427
6987	43171	ECO101382	19049	55233	CTR200613	31110	67294	PMU101430
6988	43172	ECO101314	19050	55234	CTR200617	31111	67295	PMU101431
6989	43173	ECO101095	19051	55235	CTR200623	31112	67296	PMU101433
6990	43174	ECO101567	19052	55236	CTR200632	31113	67297	PMU101440
6991	43175	ECO101568	19053	55237	CTR200633	31114	67298	PMU101445
6992	43176	ECO101180	19054	55238	CTR200637	31115	67299	PMU101446
6993	43177	ECO104213	19055	55239	CTR200639	31116	67300	PMU101448
6994	43178	ECO102023	19056	55240	CTR200643	31117	67301	PMU101453
6995	43179	ECO104212	19057	55241	CTR200647	31118	67302	PMU101465
6996	43180	ECO103029	19058	55242	CTR200650	31119	67303	PMU101475
6997	43181	ECO102646	19059	55243	CTR200659	31120	67304	PMU101476
6998	43182	ECO103775	19060	55244	CTR200662	31121	67305	PMU101477
6999	43183	ECO100457	19061	55245	CTR200665	31122	67306	PMU101481
7000	43184	ECO100458	19062	55246	CTR200669	31123	67307	PMU101482
7001	43185	ECO102192	19063	55247	CTR200670	31124	67308	PMU101485
7002	43186	ECO100748	19064	55248	CTR200671	31125	67309	PMU101486
7003	43187	ECO102638	19065	55249	CTR200673	31126	67310	PMU101488
7004	43188	ECO101134	19066	55250	CTR200674	31127	67311	PMU101489
7005	43189	ECO103655	19067	55251	CTR200675	31128	67312	PMU101490
7006	43190	ECO101026	19068	55252	CTR200677	31129	67313	PMU101491
7007	43191	ECO102645	19069	55253	CTR200682	31130	67314	PMU101492
7008	43192	ECO100185	19070	55254	CTR200684	31131	67315	PMU101501
7009	43193	ECO102415	19071	55255	CTR200685	31132	67316	PMU101502
7010	43194	ECO103820	19072	55256	CTR200689	31133	67317	PMU101505
7011	43195	ECO100161	19073	55257	CTR200690	31134	67318	PMU101507
7012	43196	ECO101500	19074	55258	CTR200691	31135	67319	PMU101508
7013	43197	ECO102599	19075	55259	CTR200696	31136	67320	PMU101513
7014	43198	ECO102600	19076	55260	CTR200702	31137	67321	PMU101519
7015	43199	ECO101333	19077	55261	CTR200706	31138	67322	PMU101524
7016	43200	ECO100485	19078	55262	CTR200708	31139	67323	PMU101529
7017	43201	ECO101376	19079	55263	CTR200710	31140	67324	PMU101530
7018	43202	ECO102420	19080	55264	CTR200711	31141	67325	PMU101531
7019	43203	ECO101308	19081	55265	CTR200712	31142	67326	PMU101532
7020	43204	ECO102935	19082	55266	CTR200713	31143	67327	PMU101535
7021	43205	ECO101944	19083	55267	CTR200720	31144	67328	PMU101536
7022	43206	ECO101482	19084	55268	CTR200722	31145	67329	PMU101537
7023	43207	ECO100647	19085	55269	CTR200725	31146	67330	PMU101541
7024	43208	ECO100648	19086	55270	CTR200726	31147	67331	PMU101542
7025	43209	ECO102454	19087	55271	CTR200727	31148	67332	PMU101543
7026	43210	ECO101393	19088	55272	CTR200728	31149	67333	PMU101546
7027	43211	ECO103558	19089	55273	CTR200729	31150	67334	PMU101547
7028	43212	ECO101031	19090	55274	CTR200730	31151	67335	PMU101549
7029	43213	ECO101032	19091	55275	CTR200736	31152	67336	PMU101554
7030	43214	ECO104206	19092	55276	CTR200737	31153	67337	PMU101555
7031	43215	ECO102041	19093	55277	CTR200741	31154	67338	PMU101561
7032	43216	ECO103069	19094	55278	CTR200749	31155	67339	PMU101563
7033	43217	ECO100361	19095	55279	CTR200751	31156	67340	PMU101571
7034	43218	ECO101635	19096	55280	CTR200756	31157	67341	PMU101575
7035	43219	ECO102229	19097	55281	CTR200767	31158	67342	PMU101576

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7036	43220	ECO101035	19098	55282	CTR200769	31159	67343	PMU101582
7037	43221	ECO101036	19099	55283	CTR200773	31160	67344	PMU101587
7038	43222	ECO103972	19100	55284	CTR200774	31161	67345	PMU101589
7039	43223	ECO103973	19101	55285	CTR200781	31162	67346	PMU101591
7040	43224	ECO102872	19102	55286	CTR200782	31163	67347	PMU101594
7041	43225	ECO102578	19103	55287	CTR200783	31164	67348	PMU101602
7042	43226	ECO102216	19104	55288	CTR200784	31165	67349	PMU101606
7043	43227	ECO104131	19105	55289	CTR200785	31166	67350	PMU101608
7044	43228	ECO101068	19106	55290	CTR200786	31167	67351	PMU101609
7045	43229	ECO103115	19107	55291	CTR200787	31168	67352	PMU101617
7046	43230	ECO103020	19108	55292	CTR200788	31169	67353	PMU101621
7047	43231	ECO103617	19109	55293	CTR200789	31170	67354	PMU101625
7048	43232	ECO104180	19110	55294	CTR200790	31171	67355	PMU101629
7049	43233	ECO101812	19111	55295	CTR200791	31172	67356	PMU101631
7050	43234	ECO101444	19112	55296	CTR200792	31173	67357	PMU101632
7051	43235	ECO102302	19113	55297	CTR200793	31174	67358	PMU101638
7052	43236	ECO102501	19114	55298	CTR200794	31175	67359	PMU101639
7053	43237	ECO103914	19115	55299	CTR200795	31176	67360	PMU101645
7054	43238	ECO100223	19116	55300	CTR200796	31177	67361	PMU101646
7055	43239	ECO100869	19117	55301	CTR200797	31178	67362	PMU101659
7056	43240	ECO103414	19118	55302	CTR200798	31179	67363	PMU101660
7057	43241	ECO103188	19119	55303	CTR200799	31180	67364	PMU101661
7058	43242	ECO100025	19120	55304	CTR200800	31181	67365	PMU101662
7059	43243	ECO100026	19121	55305	CTR200801	31182	67366	PMU101666
7060	43244	ECO101739	19122	55306	CTR200802	31183	67367	PMU101673
7061	43245	ECO103024	19123	55307	CTR200803	31184	67368	PMU101674
7062	43246	ECO100093	19124	55308	CTR200804	31185	67369	PMU101675
7063	43247	ECO100905	19125	55309	CTR200807	31186	67370	PMU101677
7064	43248	ECO204845	19126	55310	CTR200808	31187	67371	PMU101683
7065	43249	ECO103684	19127	55311	CTR200809	31188	67372	PMU101686
7066	43250	ECO102129	19128	55312	CTR200810	31189	67373	PMU101692
7067	43251	ECO101870	19129	55313	CTR200811	31190	67374	PMU101693
7068	43252	ECO101871	19130	55314	CTR200812	31191	67375	PMU101695
7069	43253	ECO104108	19131	55315	CTR200816	31192	67376	PMU101696
7070	43254	ECO101452	19132	55316	CTR200818	31193	67377	PMU101698
7071	43255	ECO102300	19133	55317	CTR200819	31194	67378	PMU101700
7072	43256	ECO101996	19134	55318	CTR200821	31195	67379	PMU101701
7073	43257	ECO103685	19135	55319	CTR200822	31196	67380	PMU101704
7074	43258	ECO102193	19136	55320	CTR200830	31197	67381	PMU101714
7075	43259	ECO100445	19137	55321	CTR200831	31198	67382	PMU101716
7076	43260	ECO100407	19138	55322	CTR200833	31199	67383	PMU101717
7077	43261	ECO100408	19139	55323	CTR200835	31200	67384	PMU101721
7078	43262	ECO103101	19140	55324	CTR200836	31201	67385	PMU101726
7079	43263	ECO103919	19141	55325	CTR200853	31202	67386	PMU101729
7080	43264	ECO202238	19142	55326	CTR200854	31203	67387	PMU101730
7081	43265	ECO101034	19143	55327	CTR200857	31204	67388	PMU101731
7082	43266	ECO103809	19144	55328	CTR200859	31205	67389	PMU101732
7083	43267	ECO101369	19145	55329	CTR200860	31206	67390	PMU101736
7084	43268	ECO103586	19146	55330	CTR200863	31207	67391	PMU101737
7085	43269	ECO101591	19147	55331	CTR200865	31208	67392	PMU101738
7086	43270	ECO102304	19148	55332	CTR200872	31209	67393	PMU101739
7087	43271	ECO102266	19149	55333	CTR200876	31210	67394	PMU101742
7088	43272	ECO103880	19150	55334	CTR200881	31211	67395	PMU101743
7089	43273	ECO102017	19151	55335	CTR200884	31212	67396	PMU101744
7090	43274	ECO102018	19152	55336	CTR200887	31213	67397	PMU101745

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7091	43275	ECO101513	19153	55337	CTR200891	31214	67398	PMU101746
7092	43276	ECO101346	19154	55338	CTR200892	31215	67399	PMU101749
7093	43277	ECO101515	19155	55339	CTR200894	31216	67400	PMU101752
7094	43278	ECO103480	19156	55340	CTR200895	31217	67401	PMU101754
7095	43279	ECO104248	19157	55341	CTR200896	31218	67402	PMU101759
7096	43280	ECO103668	19158	55342	CTR200901	31219	67403	PMU101764
7097	43281	ECO103581	19159	55343	CTR200902	31220	67404	PMU101765
7098	43282	ECO104257	19160	55344	CTR200903	31221	67405	PMU101767
7099	43283	ECO102671	19161	55345	CTR200904	31222	67406	PMU101771
7100	43284	ECO101729	19162	55346	CTR200905	31223	67407	PMU101790
7101	43285	ECO102346	19163	55347	CTR200906	31224	67408	PMU101795
7102	43286	ECO102921	19164	55348	EBC100005	31225	67409	PMU101796
7103	43287	ECO101239	19165	55349	EBC100017	31226	67410	PMU101798
7104	43288	ECO100868	19166	55350	EBC100019	31227	67411	PMU101806
7105	43289	ECO102868	19167	55351	EBC100020	31228	67412	PMU101808
7106	43290	ECO102869	19168	55352	EBC100022	31229	67413	PMU101812
7107	43291	ECO100197	19169	55353	EBC100023	31230	67414	PMU101816
7108	43292	ECO101438	19170	55354	EBC100027	31231	67415	PMU101817
7109	43293	ECO100906	19171	55355	EBC100031	31232	67416	PMU101830
7110	43294	ECO104049	19172	55356	EBC100041	31233	67417	PMU101843
7111	43295	ECO104050	19173	55357	EBC100042	31234	67418	PMU101851
7112	43296	ECO100032	19174	55358	EBC100048	31235	67419	PMU101853
7113	43297	ECO100522	19175	55359	EBC100049	31236	67420	PMU101858
7114	43298	ECO102654	19176	55360	EBC100065	31237	67421	PMU101860
7115	43299	ECO102403	19177	55361	EBC100070	31238	67422	PMU101863
7116	43300	ECO101096	19178	55362	EBC100081	31239	67423	PMU101864
7117	43301	ECO100081	19179	55363	EBC100090	31240	67424	PMU101865
7118	43302	ECO101943	19180	55364	EBC100100	31241	67425	PMU101868
7119	43303	ECO102473	19181	55365	EBC100108	31242	67426	PMU101871
7120	43304	ECO101781	19182	55366	EBC100116	31243	67427	PMU101872
7121	43305	ECO100915	19183	55367	EBC100127	31244	67428	PMU101874
7122	43306	ECO101868	19184	55368	EBC100136	31245	67429	PMU101875
7123	43307	ECO103487	19185	55369	EBC100144	31246	67430	PMU101877
7124	43308	ECO101421	19186	55370	EBC100161	31247	67431	PMU101887
7125	43309	ECO104037	19187	55371	EBC100201	31248	67432	PMU101889
7126	43310	ECO100004	19188	55372	EBC100212	31249	67433	PMU101891
7127	43311	ECO100005	19189	55373	EBC100218	31250	67434	PMU101892
7128	43312	ECO101403	19190	55374	EBC100227	31251	67435	PMU101893
7129	43313	ECO205169	19191	55375	EBC100241	31252	67436	PMU101896
7130	43314	ECO102817	19192	55376	EBC100251	31253	67437	PMU101900
7131	43315	ECO100725	19193	55377	EBC100252	31254	67438	PMU101901
7132	43316	ECO102870	19194	55378	EBC100259	31255	67439	PMU101907
7133	43317	ECO102306	19195	55379	EBC100261	31256	67440	PMU101914
7134	43318	ECO100716	19196	55380	EBC100263	31257	67441	PMU101915
7135	43319	ECO102639	19197	55381	EBC100292	31258	67442	PMU101916
7136	43320	ECO101613	19198	55382	EBC100300	31259	67443	PMU101917
7137	43321	ECO101614	19199	55383	EBC100304	31260	67444	PMU101920
7138	43322	ECO103104	19200	55384	EBC100307	31261	67445	PMU101923
7139	43323	ECO100584	19201	55385	EBC100310	31262	67446	PMU101930
7140	43324	ECO103557	19202	55386	EBC100321	31263	67447	PMU101940
7141	43325	ECO104160	19203	55387	EBC100323	31264	67448	PMU101945
7142	43326	ECO100381	19204	55388	EBC100329	31265	67449	PMU101950
7143	43327	ECO102096	19205	55389	EBC100331	31266	67450	PMU101951
7144	43328	ECO102741	19206	55390	EBC100332	31267	67451	PMU101955
7145	43329	ECO101977	19207	55391	EBC100341	31268	67452	PMU101960

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7146	43330	ECO101978	19208	55392	EBC100355	31269	67453	PMU101967
7147	43331	ECO101334	19209	55393	EBC100356	31270	67454	PMU101968
7148	43332	ECO103594	19210	55394	EBC100359	31271	67455	PMU101974
7149	43333	ECO100706	19211	55395	EBC100362	31272	67456	PMU101977
7150	43334	ECO104227	19212	55396	EBC100370	31273	67457	PMU101978
7151	43335	ECO205289	19213	55397	EBC100373	31274	67458	PMU101981
7152	43336	ECO103627	19214	55398	EBC100384	31275	67459	PMU101984
7153	43337	ECO100785	19215	55399	EBC100388	31276	67460	PMU101985
7154	43338	ECO100786	19216	55400	EBC100399	31277	67461	PMU101986
7155	43339	ECO103831	19217	55401	EBC100407	31278	67462	PMU101987
7156	43340	ECO102852	19218	55402	EBC100408	31279	67463	PMU101989
7157	43341	ECO102051	19219	55403	EBC100415	31280	67464	PMU101990
7158	43342	ECO100967	19220	55404	EBC100417	31281	67465	PMU101994
7159	43343	ECO103506	19221	55405	EBC100426	31282	67466	PMU101995
7160	43344	ECO103866	19222	55406	EBC100434	31283	67467	PMU101997
7161	43345	ECO101221	19223	55407	EBC100441	31284	67468	PMU101998
7162	43346	ECO100402	19224	55408	EBC100442	31285	67469	PMU102001
7163	43347	ECO101175	19225	55409	EBC100444	31286	67470	PMU102003
7164	43348	ECO103532	19226	55410	EBC100445	31287	67471	PMU102009
7165	43349	ECO103533	19227	55411	EBC100447	31288	67472	PMU102010
7166	43350	ECO100712	19228	55412	EBC100455	31289	67473	PMU102011
7167	43351	ECO100954	19229	55413	EBC100460	31290	67474	PPU100005
7168	43352	ECO102466	19230	55414	EBC100461	31291	67475	PPU100008
7169	43353	ECO102467	19231	55415	EBC100465	31292	67476	PPU100025
7170	43354	ECO100150	19232	55416	EBC100468	31293	67477	PPU100087
7171	43355	ECO100151	19233	55417	EBC100474	31294	67478	PPU100091
7172	43356	ECO103094	19234	55418	EBC100475	31295	67479	PPU100092
7173	43357	ECO103734	19235	55419	EBC100477	31296	67480	PPU100111
7174	43358	ECO100808	19236	55420	EBC100486	31297	67481	PPU100113
7175	43359	ECO101539	19237	55421	EBC100487	31298	67482	PPU100120
7176	43360	ECO101540	19238	55422	EBC100501	31299	67483	PPU100137
7177	43361	ECO100096	19239	55423	EBC100509	31300	67484	PPU100159
7178	43362	ECO103245	19240	55424	EBC100510	31301	67485	PPU100161
7179	43363	ECO103246	19241	55425	EBC100514	31302	67486	PPU100174
7180	43364	ECO102462	19242	55426	EBC100530	31303	67487	PPU100194
7181	43365	ECO102463	19243	55427	EBC100539	31304	67488	PPU100206
7182	43366	ECO103098	19244	55428	EBC100541	31305	67489	PPU100210
7183	43367	ECO100255	19245	55429	EBC100545	31306	67490	PPU100215
7184	43368	ECO100144	19246	55430	EBC100550	31307	67491	PPU100226
7185	43369	ECO100145	19247	55431	EBC100562	31308	67492	PPU100241
7186	43370	ECO103399	19248	55432	EBC100570	31309	67493	PPU100250
7187	43371	ECO204448	19249	55433	EBC100597	31310	67494	PPU100260
7188	43372	ECO102920	19250	55434	EBC100610	31311	67495	PPU100265
7189	43373	ECO104218	19251	55435	EBC100616	31312	67496	PPU100354
7190	43374	ECO104241	19252	55436	EBC100624	31313	67497	PPU100404
7191	43375	ECO102363	19253	55437	EBC100628	31314	67498	PPU100405
7192	43376	ECO100980	19254	55438	EBC100631	31315	67499	PPU100406
7193	43377	ECO103453	19255	55439	EBC100632	31316	67500	PPU100420
7194	43378	ECO103454	19256	55440	EBC100646	31317	67501	PPU100429
7195	43379	ECO204438	19257	55441	EBC100653	31318	67502	PPU100453
7196	43380	ECO103284	19258	55442	EBC100654	31319	67503	PPU100478
7197	43381	ECO102066	19259	55443	EBC100655	31320	67504	PPU100484
7198	43382	ECO102355	19260	55444	EBC100656	31321	67505	PPU100534
7199	43383	ECO103000	19261	55445	EBC100663	31322	67506	PPU100559
7200	43384	ECO102612	19262	55446	EBC100664	31323	67507	PPU100577

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7201	43385	ECO101188	19263	55447	EBC100668	31324	67508	PPU100582
7202	43386	ECO103424	19264	55448	EBC100672	31325	67509	PPU100583
7203	43387	ECO100572	19265	55449	EBC100683	31326	67510	PPU100606
7204	43388	ECO102351	19266	55450	EBC100689	31327	67511	PPU100621
7205	43389	ECO104028	19267	55451	EBC100699	31328	67512	PPU100631
7206	43390	ECO100475	19268	55452	EBC100702	31329	67513	PPU100633
7207	43391	ECO104233	19269	55453	EBC100703	31330	67514	PPU100635
7208	43392	ECO101499	19270	55454	EBC100704	31331	67515	PPU100641
7209	43393	ECO101671	19271	55455	EBC100706	31332	67516	PPU100647
7210	43394	ECO100867	19272	55456	EBC100717	31333	67517	PPU100648
7211	43395	KPN200073	19273	55457	EBC100728	31334	67518	PPU100759
7212	43396	KPN201086	19274	55458	EBC100731	31335	67519	PPU100764
7213	43397	KPN201087	19275	55459	EBC100765	31336	67520	PPU100765
7214	43398	KPN103883	19276	55460	EBC100767	31337	67521	PPU100810
7215	43399	KPN208757	19277	55461	EBC100769	31338	67522	PPU100841
7216	43400	KPN203895	19278	55462	EBC100771	31339	67523	PPU100844
7217	43401	KPN303445	19279	55463	EBC100779	31340	67524	PPU100858
7218	43402	KPN203896	19280	55464	EBC100780	31341	67525	PPU100863
7219	43403	KPN204465	19281	55465	EBC100789	31342	67526	PPU100866
7220	43404	KPN204464	19282	55466	EBC100804	31343	67527	PPU100873
7221	43405	KPN201990	19283	55467	EBC100805	31344	67528	PPU100881
7222	43406	KPN203025	19284	55468	EBC100806	31345	67529	PPU100882
7223	43407	KPN203487	19285	55469	EBC100807	31346	67530	PPU100885
7224	43408	KPN203310	19286	55470	EBC100809	31347	67531	PPU100890
7225	43409	KPN300969	19287	55471	EBC100812	31348	67532	PPU100894
7226	43410	KPN201549	19288	55472	EBC100814	31349	67533	PPU100917
7227	43411	KPN203973	19289	55473	EBC100818	31350	67534	PPU100927
7228	43412	KPN108099	19290	55474	EBC100820	31351	67535	PPU100957
7229	43413	KPN207255	19291	55475	EBC100826	31352	67536	PPU100970
7230	43414	KPN203534	19292	55476	EBC100833	31353	67537	PPU101006
7231	43415	KPN204596	19293	55477	EBC100834	31354	67538	PPU101007
7232	43416	KPN203246	19294	55478	EBC100838	31355	67539	PPU101032
7233	43417	KPN203084	19295	55479	EBC100856	31356	67540	PPU101036
7234	43418	KPN206685	19296	55480	EBC100867	31357	67541	PPU101058
7235	43419	KPN203146	19297	55481	EBC100870	31358	67542	PPU101059
7236	43420	KPN200459	19298	55482	EBC100872	31359	67543	PPU101061
7237	43421	KPN200460	19299	55483	EBC100874	31360	67544	PPU101063
7238	43422	KPN206300	19300	55484	EBC100875	31361	67545	PPU101064
7239	43423	PAE201546	19301	55485	EBC100878	31362	67546	PPU101069
7240	43424	PAE202422	19302	55486	EBC100895	31363	67547	PPU101071
7241	43425	PAE100416	19303	55487	EBC100904	31364	67548	PPU101089
7242	43426	PAE204992	19304	55488	EBC100905	31365	67549	PPU101090
7243	43427	PAE203039	19305	55489	EBC100906	31366	67550	PPU101093
7244	43428	PAE203038	19306	55490	EBC100908	31367	67551	PPU101099
7245	43429	PAE204262	19307	55491	EBC100918	31368	67552	PPU101118
7246	43430	PAE204064	19308	55492	EBC100919	31369	67553	PPU101132
7247	43431	PAE204269	19309	55493	EBC100920	31370	67554	PPU101135
7248	43432	PAE204270	19310	55494	EBC100928	31371	67555	PPU101137
7249	43433	PAE203045	19311	55495	EBC100940	31372	67556	PPU101138
7250	43434	PAE204248	19312	55496	EBC100948	31373	67557	PPU101140
7251	43435	PAE204249	19313	55497	EBC100951	31374	67558	PPU101143
7252	43436	PAE205294	19314	55498	EBC100961	31375	67559	PPU101150
7253	43437	PAE202311	19315	55499	EBC100964	31376	67560	PPU101155
7254	43438	PAE203158	19316	55500	EBC100965	31377	67561	PPU101164
7255	43439	PAE204883	19317	55501	EBC100966	31378	67562	PPU101166

WO 02/077183									PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7256	43440	PAE204884	19318	55502	EBC100969	31379	67563	PPU101167			
7257	43441	PAE203151	19319	55503	EBC100975	31380	67564	PPU101171			
7258	43442	PAE203152	19320	55504	EBC100976	31381	67565	PPU101173			
7259	43443	PAE203011	19321	55505	EBC100985	31382	67566	PPU101175			
7260	43444	PAE202220	19322	55506	EBC100989	31383	67567	PPU101184			
7261	43445	PAE200714	19323	55507	EBC101014	31384	67568	PPU101189			
7262	43446	PAE105557	19324	55508	EBC101020	31385	67569	PPU101200			
7263	43447	PAE109154	19325	55509	EBC101022	31386	67570	PPU101203			
7264	43448	PAE203009	19326	55510	EBC101030	31387	67571	PPU101233			
7265	43449	PAE204255	19327	55511	EBC101032	31388	67572	PPU101236			
7266	43450	PAE204261	19328	55512	EBC101033	31389	67573	PPU101283			
7267	43451	PAE202582	19329	55513	EBC101035	31390	67574	PPU101372			
7268	43452	PAE200787	19330	55514	EBC101041	31391	67575	PPU101373			
7269	43453	PAE201300	19331	55515	EBC101043	31392	67576	PPU101392			
7270	43454	PAE200352	19332	55516	EBC101051	31393	67577	PPU101395			
7271	43455	PAE200264	19333	55517	EBC101052	31394	67578	PPU101396			
7272	43456	PAE201984	19334	55518	EBC101067	31395	67579	PPU101409			
7273	43457	PAE203066	19335	55519	EBC101072	31396	67580	PPU101423			
7274	43458	PAE203981	19336	55520	EBC101089	31397	67581	PPU101429			
7275	43459	PAE203004	19337	55521	EBC101093	31398	67582	PPU101434			
7276	43460	PAE203003	19338	55522	EBC101094	31399	67583	PPU101447			
7277	43461	PAE204242	19339	55523	EBC101097	31400	67584	PPU101455			
7278	43462	PAE204243	19340	55524	EBC101110	31401	67585	PPU101463			
7279	43463	PAE204246	19341	55525	EBC101111	31402	67586	PPU101466			
7280	43464	PAE204247	19342	55526	EBC101113	31403	67587	PPU101491			
7281	43465	PAE204252	19343	55527	EBC101120	31404	67588	PPU101496			
7282	43466	PAE204253	19344	55528	EBC101122	31405	67589	PPU101498			
7283	43467	PAE205071	19345	55529	EBC101127	31406	67590	PPU101510			
7284	43468	PAE204540	19346	55530	EBC101129	31407	67591	PPU101511			
7285	43469	PAE203928	19347	55531	EBC101139	31408	67592	PPU101525			
7286	43470	PAE205202	19348	55532	EBC101151	31409	67593	PPU101526			
7287	43471	PAE202195	19349	55533	EBC101152	31410	67594	PPU101529			
7288	43472	PAE204067	19350	55534	EBC101153	31411	67595	PPU101541			
7289	43473	PAE203761	19351	55535	EBC101162	31412	67596	PPU101559			
7290	43474	PAE205562	19352	55536	EBC101178	31413	67597	PPU101560			
7291	43475	PAE204102	19353	55537	EBC101181	31414	67598	PPU101562			
7292	43476	PAE204103	19354	55538	EBC101184	31415	67599	PPU101569			
7293	43477	PAE201114	19355	55539	EBC101190	31416	67600	PPU101577			
7294	43478	PAE200377	19356	55540	EBC101191	31417	67601	PPU101602			
7295	43479	PAE205204	19357	55541	EBC101192	31418	67602	PPU101660			
7296	43480	PAE202126	19358	55542	EBC101194	31419	67603	PPU101672			
7297	43481	PAE202396	19359	55543	EBC101201	31420	67604	PPU101702			
7298	43482	PAE204678	19360	55544	EBC101202	31421	67605	PPU101727			
7299	43483	PAE204250	19361	55545	EBC101203	31422	67606	PPU101735			
7300	43484	PAE204251	19362	55546	EBC101205	31423	67607	PPU101750			
7301	43485	PAE200641	19363	55547	EBC101214	31424	67608	PPU101751			
7302	43486	PAE204129	19364	55548	EBC101217	31425	67609	PPU101755			
7303	43487	PAE204130	19365	55549	EBC101223	31426	67610	PPU101763			
7304	43488	PAE201461	19366	55550	EBC101229	31427	67611	PPU101764			
7305	43489	PAE202669	19367	55551	EBC101230	31428	67612	PPU101770			
7306	43490	PAE200471	19368	55552	EBC101233	31429	67613	PPU101791			
7307	43491	PAE204668	19369	55553	EBC101239	31430	67614	PPU101810			
7308	43492	PAE204504	19370	55554	EBC101242	31431	67615	PPU101821			
7309	43493	PAE204256	19371	55555	EBC101244	31432	67616	PPU101826			
7310	43494	PAE204257	19372	55556	EBC101245	31433	67617	PPU101827			

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7311	43495	PAE202682	19373	55557	EBC101246	31434	67618	PPU101843
7312	43496	PAE204024	19374	55558	EBC101249	31435	67619	PPU101846
7313	43497	PAE201364	19375	55559	EBC101259	31436	67620	PPU101850
7314	43498	PAE200937	19376	55560	EBC101260	31437	67621	PPU101855
7315	43499	PAE201397	19377	55561	EBC101263	31438	67622	PPU101878
7316	43500	PAE201269	19378	55562	EBC101268	31439	67623	PPU101891
7317	43501	PAE205431	19379	55563	EBC101277	31440	67624	PPU101916
7318	43502	PAE205502	19380	55564	EBC101279	31441	67625	PPU101949
7319	43503	PAE201492	19381	55565	EBC101280	31442	67626	PPU101950
7320	43504	PAE203475	19382	55566	EBC101281	31443	67627	PPU101952
7321	43505	PAE202632	19383	55567	EBC101282	31444	67628	PPU101954
7322	43506	PAE201359	19384	55568	EBC101285	31445	67629	PPU101976
7323	43507	PAE202724	19385	55569	EBC101287	31446	67630	PPU101981
7324	43508	PAE204241	19386	55570	EBC101290	31447	67631	PPU101984
7325	43509	PAE203520	19387	55571	EBC101291	31448	67632	PPU101987
7326	43510	PAE203119	19388	55572	EBC101294	31449	67633	PPU101997
7327	43511	PAE200320	19389	55573	EBC101295	31450	67634	PPU102000
7328	43512	PAE200028	19390	55574	EBC101303	31451	67635	PPU102004
7329	43513	PAE204244	19391	55575	EBC101305	31452	67636	PPU102022
7330	43514	PAE204245	19392	55576	EBC101306	31453	67637	PPU102025
7331	43515	PAE200881	19393	55577	EBC101308	31454	67638	PPU102030
7332	43516	PAE204596	19394	55578	EBC101311	31455	67639	PPU102034
7333	43517	PAE205311	19395	55579	EBC101317	31456	67640	PPU102036
7334	43518	PAE204260	19396	55580	EBC101321	31457	67641	PPU102041
7335	43519	PAE204078	19397	55581	EBC101322	31458	67642	PPU102045
7336	43520	PAE200649	19398	55582	EBC101332	31459	67643	PPU102062
7337	43521	PAE205025	19399	55583	EBC101339	31460	67644	PPU102065
7338	43522	PAE200129	19400	55584	EBC101342	31461	67645	PPU102070
7339	43523	PAE204510	19401	55585	EBC101345	31462	67646	PPU102082
7340	43524	PAE201071	19402	55586	EBC101346	31463	67647	PPU102088
7341	43525	PAE204266	19403	55587	EBC101349	31464	67648	PPU102092
7342	43526	PAE202145	19404	55588	EBC101352	31465	67649	PPU102113
7343	43527	PAE202492	19405	55589	EBC101361	31466	67650	PPU102117
7344	43528	PAE204345	19406	55590	EBC101366	31467	67651	PPU102118
7345	43529	PAE200422	19407	55591	EBC101375	31468	67652	PPU102122
7346	43530	PAE201018	19408	55592	EBC101385	31469	67653	PPU102134
7347	43531	PAE204021	19409	55593	EBC101386	31470	67654	PPU102151
7348	43532	PAE204705	19410	55594	EBC101388	31471	67655	PPU102160
7349	43533	PAE202592	19411	55595	EBC101390	31472	67656	PPU102161
7350	43534	PAE200887	19412	55596	EBC101391	31473	67657	PPU102168
7351	43535	PAE201334	19413	55597	EBC101397	31474	67658	PPU102169
7352	43536	PAE203842	19414	55598	EBC101402	31475	67659	PPU102171
7353	43537	PAE203873	19415	55599	EBC101405	31476	67660	PPU102173
7354	43538	PAE203874	19416	55600	EBC101407	31477	67661	PPU102180
7355	43539	PAE203477	19417	55601	EBC101408	31478	67662	PPU102181
7356	43540	PAE203641	19418	55602	EBC101415	31479	67663	PPU102183
7357	43541	PAE205194	19419	55603	EBC101417	31480	67664	PPU102184
7358	43542	PAE200418	19420	55604	EBC101418	31481	67665	PPU102190
7359	43543	PAE200417	19421	55605	EBC101419	31482	67666	PPU102196
7360	43544	PAE204431	19422	55606	EBC101429	31483	67667	PPU102197
7361	43545	PAE200599	19423	55607	EBC101431	31484	67668	PPU102199
7362	43546	PAE105774	19424	55608	EBC101433	31485	67669	PPU102202
7363	43547	PAE203713	19425	55609	EBC101434	31486	67670	PPU102205
7364	43548	PAE205383	19426	55610	EBC101436	31487	67671	PPU102206
7365	43549	PAE204235	19427	55611	EBC101439	31488	67672	PPU102210

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7366	43550	PAE204265	19428	55612	EBC101451	31489	67673	PPU102228
7367	43551	PAE205188	19429	55613	EBC101455	31490	67674	PPU102242
7368	43552	PAE200960	19430	55614	EBC101456	31491	67675	PPU102253
7369	43553	PAE202468	19431	55615	EBC101457	31492	67676	PPU102277
7370	43554	PAE203372	19432	55616	EBC101460	31493	67677	PPU102291
7371	43555	PAE205388	19433	55617	EBC101468	31494	67678	PPU102301
7372	43556	PAE203080	19434	55618	EBC101470	31495	67679	PPU102306
7373	43557	PAE200505	19435	55619	EBC101472	31496	67680	PPU102310
7374	43558	PAE203482	19436	55620	EBC101473	31497	67681	PPU102313
7375	43559	PAE205243	19437	55621	EBC101475	31498	67682	PPU102360
7376	43560	PAE201916	19438	55622	EBC101476	31499	67683	PPU102385
7377	43561	PAE204767	19439	55623	EBC101480	31500	67684	PPU102410
7378	43562	PAE201683	19440	55624	EBC101481	31501	67685	PPU102427
7379	43563	PAE201682	19441	55625	EBC101482	31502	67686	PPU102433
7380	43564	PAE200120	19442	55626	EBC101483	31503	67687	PPU102549
7381	43565	PAE204574	19443	55627	EBC101489	31504	67688	PPU102582
7382	43566	PAE203278	19444	55628	EBC101510	31505	67689	PPU102596
7383	43567	PAE204273	19445	55629	EBC101518	31506	67690	PPU102659
7384	43568	PAE204272	19446	55630	EBC101519	31507	67691	PPU102660
7385	43569	PAE203706	19447	55631	EBC101520	31508	67692	PPU102676
7386	43570	PAE201875	19448	55632	EBC101521	31509	67693	PPU102678
7387	43571	PAE202494	19449	55633	EBC101544	31510	67694	PPU102683
7388	43572	PAE201635	19450	55634	EBC101545	31511	67695	PPU102698
7389	43573	PAE205019	19451	55635	EBC101552	31512	67696	PPU102730
7390	43574	PAE201962	19452	55636	EBC101559	31513	67697	PPU102745
7391	43575	PAE204373	19453	55637	EBC101560	31514	67698	PPU102760
7392	43576	PAE204267	19454	55638	EBC101567	31515	67699	PPU102763
7393	43577	PAE200933	19455	55639	EBC101577	31516	67700	PPU102796
7394	43578	PAE200220	19456	55640	EBC101578	31517	67701	PPU102821
7395	43579	PAE204471	19457	55641	EBC101581	31518	67702	PPU102849
7396	43580	PAE205485	19458	55642	EBC101582	31519	67703	PPU102859
7397	43581	PAE203863	19459	55643	EBC101583	31520	67704	PPU102891
7398	43582	PAE103489	19460	55644	EBC101589	31521	67705	PPU102900
7399	43583	PAE200468	19461	55645	EBC101605	31522	67706	PPU102936
7400	43584	PAE204034	19462	55646	EBC101608	31523	67707	PPU102947
7401	43585	PAE204314	19463	55647	EBC101609	31524	67708	PPU102955
7402	43586	PAE109190	19464	55648	EBC101610	31525	67709	PPU103014
7403	43587	PAE202946	19465	55649	EBC101611	31526	67710	PPU103018
7404	43588	PAE202947	19466	55650	EBC101615	31527	67711	PPU103038
7405	43589	PAE200400	19467	55651	EBC101616	31528	67712	PPU103094
7406	43590	PAE204254	19468	55652	EBC101625	31529	67713	PPU103106
7407	43591	PAE204937	19469	55653	EBC101629	31530	67714	PPU103107
7408	43592	PAE205488	19470	55654	EBC101637	31531	67715	PPU103111
7409	43593	PAE202194	19471	55655	EBC101639	31532	67716	PPU103115
7410	43594	PAE204155	19472	55656	EBC101642	31533	67717	PPU103141
7411	43595	PAE204411	19473	55657	EBC101652	31534	67718	PPU103150
7412	43596	PAE202639	19474	55658	EBC101675	31535	67719	PPU103159
7413	43597	PAE200141	19475	55659	EBC101678	31536	67720	PPU103162
7414	43598	PAE202081	19476	55660	EBC101693	31537	67721	PPU103214
7415	43599	PAE204121	19477	55661	EBC101695	31538	67722	PPU103226
7416	43600	PAE204122	19478	55662	EBC101703	31539	67723	PPU103228
7417	43601	PAE202740	19479	55663	EBC101709	31540	67724	PPU103316
7418	43602	PAE202739	19480	55664	EBC101718	31541	67725	PPU103326
7419	43603	PAE202459	19481	55665	EBC101731	31542	67726	PPU103341
7420	43604	PAE202638	19482	55666	EBC101736	31543	67727	PPU103342

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7421	43605	PAE200547	19483	55667	EBC101738	31544	67728	PPU103349
7422	43606	PAE202034	19484	55668	EBC101762	31545	67729	PPU103355
7423	43607	PAE202409	19485	55669	EBC101771	31546	67730	PPU103357
7424	43608	PAE205083	19486	55670	EBC101778	31547	67731	PPU103373
7425	43609	PAE202099	19487	55671	EBC101780	31548	67732	PPU103399
7426	43610	PAE204662	19488	55672	EBC101783	31549	67733	PPU103404
7427	43611	PAE201867	19489	55673	EBC101789	31550	67734	PPU103409
7428	43612	PAE203700	19490	55674	EBC101794	31551	67735	PPU103412
7429	43613	PAE204330	19491	55675	EBC101797	31552	67736	PPU103428
7430	43614	PAE204740	19492	55676	EBC101798	31553	67737	PPU103432
7431	43615	PAE202179	19493	55677	EBC101799	31554	67738	PPU103462
7432	43616	PAE202486	19494	55678	EBC101801	31555	67739	PPU103463
7433	43617	PAE204361	19495	55679	EBC101805	31556	67740	PPU103467
7434	43618	PAE205438	19496	55680	EBC101808	31557	67741	PPU103524
7435	43619	PAE200859	19497	55681	EBC101811	31558	67742	PPU103564
7436	43620	PAE204800	19498	55682	EBC101813	31559	67743	PPU103565
7437	43621	PAE204614	19499	55683	EBC101816	31560	67744	PPU103595
7438	43622	PAE204259	19500	55684	EBC101821	31561	67745	PPU103619
7439	43623	PAE205072	19501	55685	EBC101838	31562	67746	PPU103623
7440	43624	PAE205558	19502	55686	EBC101843	31563	67747	PPU103624
7441	43625	PAE201694	19503	55687	EBC101849	31564	67748	PPU103628
7442	43626	PAE202753	19504	55688	EBC101854	31565	67749	PPU103632
7443	43627	PAE201361	19505	55689	EBC101861	31566	67750	PPU103638
7444	43628	PAE201647	19506	55690	EBC101862	31567	67751	PPU103670
7445	43629	PAE202225	19507	55691	EBC101868	31568	67752	PPU103675
7446	43630	PAE200183	19508	55692	EBC101869	31569	67753	PPU103677
7447	43631	PAE201381	19509	55693	EBC101870	31570	67754	PPU103681
7448	43632	PAE205473	19510	55694	EBC101881	31571	67755	PPU103688
7449	43633	PAE202400	19511	55695	EBC101884	31572	67756	PPU103701
7450	43634	PAE108022	19512	55696	EBC101891	31573	67757	PPU103710
7451	43635	PAE200303	19513	55697	EBC101895	31574	67758	PPU103712
7452	43636	PAE204953	19514	55698	EBC101896	31575	67759	PPU103714
7453	43637	PAE204922	19515	55699	EBC101897	31576	67760	PPU103715
7454	43638	PAE200461	19516	55700	EBC101909	31577	67761	PPU103733
7455	43639	PAE200143	19517	55701	EBC101910	31578	67762	PPU103772
7456	43640	PAE201672	19518	55702	EBC101912	31579	67763	PPU103844
7457	43641	PAE202608	19519	55703	EBC101919	31580	67764	PPU103878
7458	43642	PAE201949	19520	55704	EBC101921	31581	67765	PPU103879
7459	43643	PAE202350	19521	55705	EBC101922	31582	67766	PPU103881
7460	43644	PAE204580	19522	55706	EBC101930	31583	67767	PPU103884
7461	43645	PAE204911	19523	55707	EBC101931	31584	67768	PPU103891
7462	43646	PAE200095	19524	55708	EBC101940	31585	67769	PPU103901
7463	43647	PAE200091	19525	55709	EBC101941	31586	67770	PPU103902
7464	43648	PAE202683	19526	55710	EBC101943	31587	67771	PPU103909
7465	43649	PAE112443	19527	55711	EBC101949	31588	67772	PPU103928
7466	43650	PAE202015	19528	55712	EBC101952	31589	67773	PPU103929
7467	43651	PAE202397	19529	55713	EBC101954	31590	67774	PPU103938
7468	43652	PAE202829	19530	55714	EBC101969	31591	67775	PPU103947
7469	43653	PAE201633	19531	55715	EBC101974	31592	67776	PPU103948
7470	43654	PAE200425	19532	55716	EBC101979	31593	67777	PPU103956
7471	43655	PAE204036	19533	55717	EBC101986	31594	67778	PPU103958
7472	43656	PAE202012	19534	55718	EBC101988	31595	67779	PPU103969
7473	43657	PAE201213	19535	55719	EBC101990	31596	67780	PPU103985
7474	43658	PAE201214	19536	55720	EBC101993	31597	67781	PPU103989
7475	43659	PAE106754	19537	55721	EBC102001	31598	67782	PPU103990

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7476	43660	PAE200372	19538	55722	EBC102003	31599	67783	PPU104014
7477	43661	PAE204877	19539	55723	EBC102005	31600	67784	PPU104022
7478	43662	PAE201862	19540	55724	EBC102012	31601	67785	PPU104025
7479	43663	PAE204119	19541	55725	EBC102015	31602	67786	PPU104027
7480	43664	PAE204294	19542	55726	EBC102031	31603	67787	PPU104035
7481	43665	PAE204293	19543	55727	EBC102035	31604	67788	PPU104070
7482	43666	PAE205430	19544	55728	EBC102039	31605	67789	PPU104071
7483	43667	PAE204285	19545	55729	EBC102047	31606	67790	PPU104089
7484	43668	PAE201101	19546	55730	EBC102052	31607	67791	PPU104091
7485	43669	PAE203505	19547	55731	EBC102060	31608	67792	PPU104095
7486	43670	PAE201449	19548	55732	EBC102062	31609	67793	PPU104136
7487	43671	PAE203149	19549	55733	EBC102063	31610	67794	PPU104145
7488	43672	PAE200423	19550	55734	EBC102064	31611	67795	PPU104151
7489	43673	PAE202495	19551	55735	EBC102067	31612	67796	PPU104158
7490	43674	PAE200485	19552	55736	EBC102068	31613	67797	PPU104167
7491	43675	PAE201357	19553	55737	EBC102069	31614	67798	PPU104342
7492	43676	PAE203636	19554	55738	EBC102075	31615	67799	PPU104432
7493	43677	PAE200875	19555	55739	EBC102081	31616	67800	PPU104433
7494	43678	PAE200654	19556	55740	EBC102091	31617	67801	PPU104463
7495	43679	PAE205031	19557	55741	EBC102094	31618	67802	PPU104465
7496	43680	PAE200232	19558	55742	EBC102095	31619	67803	PPU104469
7497	43681	PAE200221	19559	55743	EBC102101	31620	67804	PPU104471
7498	43682	PAE203171	19560	55744	EBC102104	31621	67805	PPU104473
7499	43683	PAE202788	19561	55745	EBC102105	31622	67806	PPU104475
7500	43684	PAE203413	19562	55746	EBC102113	31623	67807	PPU104478
7501	43685	PAE205342	19563	55747	EBC102119	31624	67808	PPU104479
7502	43686	PAE204826	19564	55748	EBC102124	31625	67809	PPU104481
7503	43687	PAE203391	19565	55749	EBC102139	31626	67810	PPU104483
7504	43688	PAE200016	19566	55750	EBC102140	31627	67811	PPU104488
7505	43689	PAE204223	19567	55751	EBC102147	31628	67812	PPU104492
7506	43690	PAE203213	19568	55752	EBC102151	31629	67813	PPU104497
7507	43691	PAE202107	19569	55753	EBC102152	31630	67814	PPU104498
7508	43692	PAE204622	19570	55754	EBC102171	31631	67815	PPU104500
7509	43693	PAE204687	19571	55755	EBC102178	31632	67816	PPU104501
7510	43694	PAE203198	19572	55756	EBC102179	31633	67817	PPU104502
7511	43695	PAE202587	19573	55757	EBC102180	31634	67818	PPU104504
7512	43696	PAE200459	19574	55758	EBC102182	31635	67819	PPU104505
7513	43697	PAE203734	19575	55759	EBC102199	31636	67820	PPU104507
7514	43698	PAE202989	19576	55760	EBC102200	31637	67821	PPU104517
7515	43699	PAE200008	19577	55761	EBC102209	31638	67822	PPU104518
7516	43700	PAE201049	19578	55762	EBC102210	31639	67823	PPU104520
7517	43701	PAE205205	19579	55763	EBC102211	31640	67824	PPU104522
7518	43702	PAE201697	19580	55764	EBC102213	31641	67825	PPU104523
7519	43703	PAE202364	19581	55765	EBC102214	31642	67826	PPU104525
7520	43704	PAE201267	19582	55766	EBC102216	31643	67827	PPU104526
7521	43705	PAE201789	19583	55767	EBC102240	31644	67828	PPU104527
7522	43706	PAE109011	19584	55768	EBC102244	31645	67829	PPU104529
7523	43707	PAE202390	19585	55769	EBC102263	31646	67830	PPU104531
7524	43708	PAE200217	19586	55770	EBC102265	31647	67831	PPU104532
7525	43709	PAE204909	19587	55771	EBC102266	31648	67832	PPU104534
7526	43710	PAE203877	19588	55772	EBC102270	31649	67833	PPU104535
7527	43711	PAE205001	19589	55773	EBC102273	31650	67834	PPU104541
7528	43712	STM102449	19590	55774	EBC102281	31651	67835	PPU104544
7529	43713	STM104276	19591	55775	EBC102285	31652	67836	PPU104550
7530	43714	STM100638	19592	55776	EBC102287	31653	67837	PPU104562

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7531	43715	STM102789	19593	55777	EBC102291	31654	67838	PPU104566
7532	43716	STM101116	19594	55778	EBC102295	31655	67839	PPU104571
7533	43717	STM102089	19595	55779	EBC102296	31656	67840	PPU104660
7534	43718	STM102090	19596	55780	EBC102297	31657	67841	PPU104664
7535	43719	STM103418	19597	55781	EBC102299	31658	67842	PPU104672
7536	43720	STM103805	19598	55782	EBC102309	31659	67843	PPU104679
7537	43721	STM104223	19599	55783	EBC102310	31660	67844	PPU104680
7538	43722	STM104237	19600	55784	EBC102312	31661	67845	PPU104681
7539	43723	STM100580	19601	55785	EBC102313	31662	67846	PPU104691
7540	43724	STM103506	19602	55786	EBC102315	31663	67847	PPU104709
7541	43725	STM103802	19603	55787	EBC102316	31664	67848	PPU104724
7542	43726	STM104133	19604	55788	EBC102317	31665	67849	PPU104725
7543	43727	STM103938	19605	55789	EBC102337	31666	67850	PPU104805
7544	43728	STM101278	19606	55790	EBC102338	31667	67851	PPU104809
7545	43729	STM103908	19607	55791	EBC102343	31668	67852	PPU104816
7546	43730	STM102835	19608	55792	EBC102356	31669	67853	PPU104834
7547	43731	STM100693	19609	55793	EBC102366	31670	67854	PPU104835
7548	43732	STM103815	19610	55794	EBC102374	31671	67855	PPU104838
7549	43733	STM103235	19611	55795	EBC102375	31672	67856	PPU104840
7550	43734	STM102419	19612	55796	EBC102376	31673	67857	PPU104927
7551	43735	STM102422	19613	55797	EBC102396	31674	67858	PPU104936
7552	43736	STM103274	19614	55798	EBC102411	31675	67859	PPU104938
7553	43737	STM100227	19615	55799	EBC102413	31676	67860	PPU104991
7554	43738	STM100229	19616	55800	EBC102415	31677	67861	PPU104995
7555	43739	STM100274	19617	55801	EBC102419	31678	67862	PPU105003
7556	43740	STM102366	19618	55802	EBC102427	31679	67863	PPU105011
7557	43741	STM104686	19619	55803	EBC102431	31680	67864	PPU105037
7558	43742	STM100637	19620	55804	EBC102434	31681	67865	PPU105044
7559	43743	STM101923	19621	55805	EBC102436	31682	67866	PPU105054
7560	43744	STM102011	19622	55806	EBC102437	31683	67867	PPU105055
7561	43745	STM101955	19623	55807	EBC102445	31684	67868	PPU105062
7562	43746	STM103247	19624	55808	EBC102449	31685	67869	PPU105080
7563	43747	STM101115	19625	55809	EBC102473	31686	67870	PPU105090
7564	43748	STM102401	19626	55810	EBC102475	31687	67871	PPU105100
7565	43749	STM100866	19627	55811	EBC102479	31688	67872	PPU105108
7566	43750	STM100723	19628	55812	EBC102483	31689	67873	PPU105114
7567	43751	STM100724	19629	55813	EBC102485	31690	67874	PPU105141
7568	43752	STM100541	19630	55814	EBC102486	31691	67875	PPU105172
7569	43753	STM103180	19631	55815	EBC102490	31692	67876	PPU105263
7570	43754	STM100137	19632	55816	EBC102496	31693	67877	PPU105284
7571	43755	STM102672	19633	55817	EBC102499	31694	67878	PPU105312
7572	43756	SAU800548	19634	55818	EBC102507	31695	67879	PPU105337
7573	43757	SAU800700	19635	55819	EBC102509	31696	67880	PPU105397
7574	43758	SAU801152	19636	55820	EBC102514	31697	67881	PPU105455
7575	43759	SAU801151	19637	55821	EBC102522	31698	67882	PPU105471
7576	43760	SAU802247	19638	55822	EBC102524	31699	67883	PPU105485
7577	43761	SAU800209	19639	55823	EBC102526	31700	67884	PPU105501
7578	43762	SAU802160	19640	55824	EBC102527	31701	67885	PPU105503
7579	43763	SAU603460	19641	55825	EBC102532	31702	67886	PPU105633
7580	43764	SAU800537	19642	55826	EBC102539	31703	67887	PPU105635
7581	43765	SAU802398	19643	55827	EBC102541	31704	67888	PPU105663
7582	43766	SAU802399	19644	55828	EBC102546	31705	67889	PPU105679
7583	43767	SAU800453	19645	55829	EBC102547	31706	67890	PPU105701
7584	43768	SAU801621	19646	55830	EBC102551	31707	67891	PPU105718
7585	43769	SAU800005	19647	55831	EBC102552	31708	67892	PPU105745

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7586	43770	SAU801619	19648	55832	EBC102553	31709	67893	PPU105748
7587	43771	SAU801481	19649	55833	EBC102554	31710	67894	PPU105777
7588	43772	SAU800600	19650	55834	EBC102557	31711	67895	PPU105849
7589	43773	SAU800543	19651	55835	EBC102561	31712	67896	PPU105852
7590	43774	SAU802655	19652	55836	EBC102563	31713	67897	PPU105860
7591	43775	SAU802496	19653	55837	EBC102565	31714	67898	PPU105893
7592	43776	SAU800381	19654	55838	EBC102568	31715	67899	PPU105935
7593	43777	SAU802506	19655	55839	EBC102569	31716	67900	PPU105951
7594	43778	SAU802502	19656	55840	EBC102570	31717	67901	PPU105952
7595	43779	SAU801712	19657	55841	EBC102571	31718	67902	PPU105954
7596	43780	SAU801740	19658	55842	EBC102572	31719	67903	PPU105960
7597	43781	SAU801263	19659	55843	EBC102573	31720	67904	PPU105962
7598	43782	SAU800210	19660	55844	EBC102574	31721	67905	PPU105982
7599	43783	SAU800546	19661	55845	EBC102576	31722	67906	PPU105984
7600	43784	SAU802105	19662	55846	EBC102580	31723	67907	PPU105993
7601	43785	SAU802106	19663	55847	EBC102581	31724	67908	PPU105995
7602	43786	SAU801900	19664	55848	EBC102590	31725	67909	PPU106096
7603	43787	SAU801899	19665	55849	EBC102594	31726	67910	PPU106161
7604	43788	SAU800283	19666	55850	EBC102604	31727	67911	PPU106243
7605	43789	SAU800547	19667	55851	EBC102605	31728	67912	PPU106251
7606	43790	SAU801113	19668	55852	EBC102608	31729	67913	PPU106261
7607	43791	SAU800542	19669	55853	EBC102613	31730	67914	PPU106275
7608	43792	SAU800385	19670	55854	EBC102615	31731	67915	PPU106277
7609	43793	SAU801475	19671	55855	EBC102616	31732	67916	PPU106278
7610	43794	SAU800444	19672	55856	EBC102617	31733	67917	PPU106282
7611	43795	SAU800966	19673	55857	EBC102618	31734	67918	PPU106297
7612	43796	SAU800967	19674	55858	EBC102621	31735	67919	PPU106301
7613	43797	SAU801264	19675	55859	EBC102622	31736	67920	PPU106304
7614	43798	SAU800607	19676	55860	EBC102624	31737	67921	PPU106319
7615	43799	SAU802309	19677	55861	EBC102628	31738	67922	PPU106426
7616	43800	SAU801904	19678	55862	EBC102634	31739	67923	PPU106435
7617	43801	SAU800519	19679	55863	EBC102639	31740	67924	PPU106459
7618	43802	SAU800014	19680	55864	EBC102642	31741	67925	PPU106471
7619	43803	SAU800528	19681	55865	EBC102649	31742	67926	PPU106499
7620	43804	SAU801139	19682	55866	EBC102650	31743	67927	PPU106532
7621	43805	SAU801644	19683	55867	EBC102662	31744	67928	PPU106533
7622	43806	SAU802262	19684	55868	EBC102666	31745	67929	PPU106554
7623	43807	SAU800824	19685	55869	EBC102668	31746	67930	PPU106584
7624	43808	SAU800539	19686	55870	EBC102669	31747	67931	PPU106601
7625	43809	SAU800122	19687	55871	EBC102672	31748	67932	PPU106604
7626	43810	SAU801500	19688	55872	EBC102673	31749	67933	PPU106617
7627	43811	SAU801434	19689	55873	EBC102674	31750	67934	PPU106661
7628	43812	SAU302892	19690	55874	EBC102675	31751	67935	PPU106672
7629	43813	SAU801616	19691	55875	EBC102676	31752	67936	PPU106677
7630	43814	SAU801615	19692	55876	EBC102677	31753	67937	PPU106680
7631	43815	SAU800257	19693	55877	EBC102682	31754	67938	PPU106686
7632	43816	SAU800258	19694	55878	EBC102685	31755	67939	PPU106689
7633	43817	SAU800187	19695	55879	EBC102686	31756	67940	PPU106701
7634	43818	SAU800153	19696	55880	EBC102688	31757	67941	PPU106702
7635	43819	SAU800016	19697	55881	EBC102698	31758	67942	PPU106715
7636	43820	SAU801760	19698	55882	EBC102707	31759	67943	PPU106720
7637	43821	SAU802224	19699	55883	EBC102712	31760	67944	PPU106756
7638	43822	SAU802223	19700	55884	EBC102719	31761	67945	PPU106762
7639	43823	SAU802714	19701	55885	EBC102725	31762	67946	PPU106787
7640	43824	SAU800006	19702	55886	EBC102726	31763	67947	PPU106798

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7641	43825	SAU802240	19703	55887	EBC102732	31764	67948	PPU106801
7642	43826	SAU800152	19704	55888	EBC102736	31765	67949	PPU106908
7643	43827	SAU802503	19705	55889	EBC102737	31766	67950	PPU106919
7644	43828	SAU802177	19706	55890	EBC102740	31767	67951	PPU106922
7645	43829	SAU802176	19707	55891	EBC102750	31768	67952	PPU106924
7646	43830	SAU801683	19708	55892	EBC102751	31769	67953	PPU106933
7647	43831	SAU801643	19709	55893	EBC102752	31770	67954	PPU106972
7648	43832	SAU801346	19710	55894	EBC102756	31771	67955	PPU106991
7649	43833	SAU200535	19711	55895	EBC102757	31772	67956	PPU106995
7650	43834	SAU800517	19712	55896	EBC102758	31773	67957	PPU107094
7651	43835	SAU202623	19713	55897	EBC102765	31774	67958	PPU107101
7652	43836	SAU801742	19714	55898	EBC102773	31775	67959	PPU107143
7653	43837	SAU801741	19715	55899	EBC102778	31776	67960	PPU107161
7654	43838	SAU801618	19716	55900	EBC102780	31777	67961	PPU107167
7655	43839	SAU801208	19717	55901	EBC102781	31778	67962	PPU107170
7656	43840	SAU801183	19718	55902	EBC102784	31779	67963	PPU107172
7657	43841	SAU801184	19719	55903	EBC102785	31780	67964	PPU107183
7658	43842	SAU801342	19720	55904	EBC102789	31781	67965	PPU107187
7659	43843	SAU800996	19721	55905	EBC102792	31782	67966	PPU107231
7660	43844	SAU802243	19722	55906	EBC102793	31783	67967	PPU107239
7661	43845	SAU802310	19723	55907	EBC102795	31784	67968	PPU107240
7662	43846	SAU800363	19724	55908	EBC102798	31785	67969	PPU107249
7663	43847	SAU800362	19725	55909	EBC102799	31786	67970	PPU107254
7664	43848	SAU800361	19726	55910	EBC102800	31787	67971	PPU107257
7665	43849	SAU802121	19727	55911	EBC102802	31788	67972	PPU107259
7666	43850	SAU801723	19728	55912	EBC102809	31789	67973	PPU107262
7667	43851	SAU801722	19729	55913	EBC102812	31790	67974	PPU107264
7668	43852	SAU800155	19730	55914	EBC102822	31791	67975	PPU107265
7669	43853	SAU802125	19731	55915	EBC102823	31792	67976	PPU107315
7670	43854	SAU801256	19732	55916	EBC102830	31793	67977	PPU107338
7671	43855	SAU801275	19733	55917	EBC102841	31794	67978	PPU107366
7672	43856	SAU802158	19734	55918	EBC102861	31795	67979	PPU107387
7673	43857	SAU801089	19735	55919	EBC102862	31796	67980	PPU107389
7674	43858	SAU800331	19736	55920	EBC102864	31797	67981	PPU107390
7675	43859	SAU800332	19737	55921	EBC102866	31798	67982	PPU107403
7676	43860	SAU801105	19738	55922	EBC102870	31799	67983	PPU107407
7677	43861	SAU801731	19739	55923	EBC102873	31800	67984	PPU107412
7678	43862	SAU802238	19740	55924	EBC102878	31801	67985	PPU107433
7679	43863	SAU802248	19741	55925	EBC102885	31802	67986	PPU107434
7680	43864	SAU802119	19742	55926	EBC102886	31803	67987	PPU107435
7681	43865	SAU802118	19743	55927	EBC102887	31804	67988	PPU107457
7682	43866	SAU802558	19744	55928	EBC102891	31805	67989	PPU107473
7683	43867	SAU800591	19745	55929	EBC102893	31806	67990	PPU107497
7684	43868	SAU800592	19746	55930	EBC102895	31807	67991	PPU107507
7685	43869	SAU801366	19747	55931	EBC102897	31808	67992	PPU107514
7686	43870	SAU801138	19748	55932	EBC102899	31809	67993	PPU107523
7687	43871	SAU800478	19749	55933	EBC102901	31810	67994	PPU107530
7688	43872	SAU802638	19750	55934	EBC102904	31811	67995	PPU107569
7689	43873	SAU800482	19751	55935	EBC102913	31812	67996	PPU107574
7690	43874	SAU802261	19752	55936	EBC102915	31813	67997	PPU107577
7691	43875	SAU802643	19753	55937	EBC102917	31814	67998	PPU107578
7692	43876	SAU800023	19754	55938	EBC102918	31815	67999	PPU107581
7693	43877	SAU800753	19755	55939	EBC102919	31816	68000	PPU107582
7694	43878	SAU802369	19756	55940	EBC102926	31817	68001	PPU107587
7695	43879	SAU800305	19757	55941	EBC102933	31818	68002	PPU107592

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7696	43880	SAU802225	19758	55942	EBC102934	31819	68003	PPU107601
7697	43881	SAU800195	19759	55943	EBC102935	31820	68004	PPU107618
7698	43882	SAU801193	19760	55944	EBC102936	31821	68005	PPU107622
7699	43883	SAU801698	19761	55945	EBC102941	31822	68006	PPU107631
7700	43884	SAU802397	19762	55946	EBC102943	31823	68007	PPU107649
7701	43885	SAU801516	19763	55947	EBC102948	31824	68008	PPU107669
7702	43886	SAU801515	19764	55948	EBC102952	31825	68009	PPU107690
7703	43887	SAU802189	19765	55949	EBC102953	31826	68010	PPU107700
7704	43888	SAU802507	19766	55950	EBC102954	31827	68011	PPU107707
7705	43889	SAU801286	19767	55951	EBC102957	31828	68012	PPU107709
7706	43890	SAU800118	19768	55952	EBC102958	31829	68013	PPU107712
7707	43891	SAU801362	19769	55953	EBC102960	31830	68014	PPU107748
7708	43892	SAU802139	19770	55954	EBC102962	31831	68015	PPU107754
7709	43893	SAU802632	19771	55955	EBC102963	31832	68016	PPU107780
7710	43894	SAU800476	19772	55956	EBC102965	31833	68017	PPU107798
7711	43895	SAU800176	19773	55957	EBC102970	31834	68018	PPU107799
7712	43896	SAU800177	19774	55958	EBC102973	31835	68019	PPU107801
7713	43897	SAU801013	19775	55959	EBC102980	31836	68020	PPU107802
7714	43898	SAU802511	19776	55960	EBC102982	31837	68021	PPU107818
7715	43899	SAU800230	19777	55961	EBC102984	31838	68022	PPU107820
7716	43900	SAU800259	19778	55962	EBC102986	31839	68023	PPU107824
7717	43901	SAU801257	19779	55963	EBC102987	31840	68024	PPU107844
7718	43902	SAU800357	19780	55964	EBC102988	31841	68025	PPU107861
7719	43903	SAU800306	19781	55965	EBC102990	31842	68026	PPU107872
7720	43904	SAU801094	19782	55966	EBC102996	31843	68027	PPU107884
7721	43905	SAU801095	19783	55967	EBC102997	31844	68028	PPU107886
7722	43906	SAU800252	19784	55968	EBC103002	31845	68029	PPU107887
7723	43907	SAU801511	19785	55969	EBC103018	31846	68030	PPU107895
7724	43908	SAU802711	19786	55970	EBC103019	31847	68031	PPU107909
7725	43909	SAU802100	19787	55971	EBC103021	31848	68032	PPU107911
7726	43910	SAU802098	19788	55972	EBC103024	31849	68033	PPU107935
7727	43911	SAU802099	19789	55973	EBC103027	31850	68034	PPU107953
7728	43912	SAU802539	19790	55974	EBC103030	31851	68035	PPU107961
7729	43913	SAU202590	19791	55975	EBC103032	31852	68036	PPU107970
7730	43914	SAU801205	19792	55976	EBC103034	31853	68037	PPU107994
7731	43915	SAU801507	19793	55977	EBC103044	31854	68038	PPU108029
7732	43916	SAU801508	19794	55978	EBC103045	31855	68039	PPU108041
7733	43917	SAU200470	19795	55979	EBC103066	31856	68040	PPU108062
7734	43918	SAU801011	19796	55980	EBC103067	31857	68041	PPU108073
7735	43919	SAU801680	19797	55981	EBC103074	31858	68042	PPU108076
7736	43920	SAU802244	19798	55982	EBC103078	31859	68043	PPU108078
7737	43921	SAU802610	19799	55983	EBC103083	31860	68044	PPU108082
7738	43922	SAU800189	19800	55984	EBC103089	31861	68045	PPU108086
7739	43923	SAU800463	19801	55985	EBC103090	31862	68046	PPU108087
7740	43924	SAU802654	19802	55986	EBC103091	31863	68047	PPU108097
7741	43925	SAU802606	19803	55987	EBC103092	31864	68048	PPU108105
7742	43926	SAU802230	19804	55988	EBC103094	31865	68049	PPU108108
7743	43927	SAU800942	19805	55989	EBC103096	31866	68050	PPU108140
7744	43928	SAU800001	19806	55990	EBC103098	31867	68051	PPU108141
7745	43929	SAU700396	19807	55991	EBC103099	31868	68052	PPU108153
7746	43930	SAU802249	19808	55992	EBC103101	31869	68053	PPU108157
7747	43931	SAU802510	19809	55993	EBC103102	31870	68054	PPU108163
7748	43932	SAU801677	19810	55994	EBC103106	31871	68055	PPU108165
7749	43933	SAU800490	19811	55995	EBC103107	31872	68056	PPU108168
7750	43934	SAU801179	19812	55996	EBC103112	31873	68057	PPU108173

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7751	43935	SAU802275	19813	55997	EBC103119	31874	68058	PPU108176
7752	43936	SAU802276	19814	55998	EBC103120	31875	68059	PPU108177
7753	43937	SAU802713	19815	55999	EBC103122	31876	68060	PPU108189
7754	43938	SAU801580	19816	56000	EBC103134	31877	68061	PPU108197
7755	43939	SAU800593	19817	56001	EBC103135	31878	68062	PPU108200
7756	43940	SAU801487	19818	56002	EBC103136	31879	68063	PPU108202
7757	43941	SAU801490	19819	56003	EBC103139	31880	68064	PPU108230
7758	43942	SAU801514	19820	56004	EBC103142	31881	68065	PPU108239
7759	43943	SAU801513	19821	56005	EBC103143	31882	68066	PPU108255
7760	43944	SAU802162	19822	56006	EBC103149	31883	68067	PPU108258
7761	43945	SAU801252	19823	56007	EBC103152	31884	68068	PPU108272
7762	43946	SAU802448	19824	56008	EBC103158	31885	68069	PPU108273
7763	43947	SAU800743	19825	56009	EBC103166	31886	68070	PPU108280
7764	43948	SAU801230	19826	56010	EBC103168	31887	68071	PPU108285
7765	43949	SAU801231	19827	56011	EBC103170	31888	68072	PPU108291
7766	43950	SAU802710	19828	56012	EBC103175	31889	68073	PPU108292
7767	43951	SAU801301	19829	56013	EBC103182	31890	68074	PPU108312
7768	43952	SAU801471	19830	56014	EBC103183	31891	68075	PPU108315
7769	43953	SAU801470	19831	56015	EBC103186	31892	68076	PPU108319
7770	43954	SAU802565	19832	56016	EBC103192	31893	68077	PPU108346
7771	43955	SAU802564	19833	56017	EBC103195	31894	68078	PPU108387
7772	43956	SAU800329	19834	56018	EBC103197	31895	68079	PPU108418
7773	43957	SAU800422	19835	56019	EBC103198	31896	68080	PPU108419
7774	43958	SAU800276	19836	56020	EBC103199	31897	68081	PPU108420
7775	43959	SAU802332	19837	56021	EBC103201	31898	68082	PPU108432
7776	43960	SAU802333	19838	56022	EBC103202	31899	68083	PPU108440
7777	43961	SAU300404	19839	56023	EBC103210	31900	68084	PPU108442
7778	43962	SAU800345	19840	56024	EBC103212	31901	68085	PPU108446
7779	43963	SAU800424	19841	56025	EBC103219	31902	68086	PPU108448
7780	43964	SAU801518	19842	56026	EBC103222	31903	68087	PPU108454
7781	43965	SAU801517	19843	56027	EBC103227	31904	68088	PPU108475
7782	43966	SAU802218	19844	56028	EBC103228	31905	68089	PPU108488
7783	43967	SAU802217	19845	56029	EBC103236	31906	68090	PPU108490
7784	43968	SAU802419	19846	56030	EBC103251	31907	68091	PPU108497
7785	43969	SAU800452	19847	56031	EBC103255	31908	68092	PPU108507
7786	43970	SAU502176	19848	56032	EBC103267	31909	68093	PPU108509
7787	43971	SAU800536	19849	56033	EBC103269	31910	68094	PPU108510
7788	43972	SAU800173	19850	56034	EBC103271	31911	68095	PPU108515
7789	43973	SAU800244	19851	56035	EBC103285	31912	68096	PPU108517
7790	43974	SAU802378	19852	56036	EBC103287	31913	68097	PPU108519
7791	43975	SAU800588	19853	56037	EBC103288	31914	68098	PPU108522
7792	43976	SAU801758	19854	56038	EBC103289	31915	68099	PPU108525
7793	43977	SAU800974	19855	56039	EBC103291	31916	68100	PPU108553
7794	43978	SAU801354	19856	56040	EBC103292	31917	68101	PPU108559
7795	43979	SAU800540	19857	56041	EBC103297	31918	68102	PPU108560
7796	43980	SAU800541	19858	56042	EBC103299	31919	68103	PPU108584
7797	43981	SAU802547	19859	56043	EBC103300	31920	68104	PPU108585
7798	43982	SAU801093	19860	56044	EBC103303	31921	68105	PPU108596
7799	43983	SAU800191	19861	56045	EBC103305	31922	68106	PPU108615
7800	43984	SAU800265	19862	56046	EBC103306	31923	68107	PPU108643
7801	43985	SAU800266	19863	56047	EBC103307	31924	68108	PPU108646
7802	43986	SAU802059	19864	56048	EBC103319	31925	68109	PPU108649
7803	43987	SAU800720	19865	56049	EBC103336	31926	68110	PPU108658
7804	43988	SAU802254	19866	56050	EBC103337	31927	68111	PPU108666
7805	43989	SAU801018	19867	56051	EBC103339	31928	68112	PPU108667

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7806	43990	SAU600582	19868	56052	EBC103342	31929	68113	PPU108680
7807	43991	SAU103752	19869	56053	EBC103344	31930	68114	PPU108681
7808	43992	SAU802229	19870	56054	EBC103345	31931	68115	PPU108700
7809	43993	SAU800391	19871	56055	EBC103351	31932	68116	PPU108704
7810	43994	SAU800017	19872	56056	EBC103357	31933	68117	PPU108737
7811	43995	SAU800965	19873	56057	EBC103361	31934	68118	PPU108754
7812	43996	SAU800771	19874	56058	EBC103370	31935	68119	PPU108773
7813	43997	SAU800772	19875	56059	EBC103375	31936	68120	PPU108805
7814	43998	SAU801234	19876	56060	EBC103390	31937	68121	PPU108806
7815	43999	SAU800179	19877	56061	EBC103391	31938	68122	PPU108816
7816	44000	SAU801864	19878	56062	EBC103395	31939	68123	PPU108817
7817	44001	SAU802234	19879	56063	EBC103401	31940	68124	PPU108855
7818	44002	SAU802233	19880	56064	EBC103402	31941	68125	PPU108861
7819	44003	SAU802063	19881	56065	EBC103404	31942	68126	PPU108891
7820	44004	SAU801647	19882	56066	EBC103406	31943	68127	PPU108911
7821	44005	SAU800506	19883	56067	EBC103412	31944	68128	PPU108921
7822	44006	SAU800505	19884	56068	EBC103419	31945	68129	PPU108925
7823	44007	SAU801185	19885	56069	EBC103420	31946	68130	PPU108934
7824	44008	SAU801186	19886	56070	EBC103421	31947	68131	PPU108958
7825	44009	SAU802054	19887	56071	EBC103424	31948	68132	PPU108977
7826	44010	SAU802055	19888	56072	EBC103428	31949	68133	PPU108988
7827	44011	SAU801273	19889	56073	EBC103431	31950	68134	PPU109005
7828	44012	SAU802091	19890	56074	EBC103442	31951	68135	PPU109017
7829	44013	SAU802092	19891	56075	EBC103443	31952	68136	PPU109021
7830	44014	SAU802094	19892	56076	EBC103445	31953	68137	PPU109044
7831	44015	SAU800292	19893	56077	EBC103453	31954	68138	PPU109060
7832	44016	SAU800293	19894	56078	EBC103454	31955	68139	PPU109095
7833	44017	SAU302699	19895	56079	EBC103462	31956	68140	PPU109123
7834	44018	SAU302746	19896	56080	EBC103463	31957	68141	PPU109126
7835	44019	SAU801791	19897	56081	EBC103468	31958	68142	PPU109127
7836	44020	SAU801280	19898	56082	EBC103477	31959	68143	PPU109128
7837	44021	SAU802237	19899	56083	EBC103488	31960	68144	PPU109143
7838	44022	SAU802425	19900	56084	EBC103502	31961	68145	PPU109146
7839	44023	SAU801626	19901	56085	EBC103505	31962	68146	PPU109159
7840	44024	SAU801625	19902	56086	EBC103508	31963	68147	PPU109160
7841	44025	SAU801624	19903	56087	EBC103518	31964	68148	PPU109182
7842	44026	SAU800354	19904	56088	EBC103524	31965	68149	PPU109199
7843	44027	SAU801246	19905	56089	EBC103540	31966	68150	PPU109222
7844	44028	SAU801606	19906	56090	EBC103541	31967	68151	PPU109250
7845	44029	SAU802586	19907	56091	EBC103543	31968	68152	PPU109266
7846	44030	SAU802585	19908	56092	EBC103549	31969	68153	PPU109267
7847	44031	SAU802187	19909	56093	EBC103552	31970	68154	PPU109268
7848	44032	SAU800924	19910	56094	EBC103560	31971	68155	PPU109276
7849	44033	SAU800925	19911	56095	EBC103562	31972	68156	PPU109277
7850	44034	SAU801719	19912	56096	EBC103564	31973	68157	PPU109294
7851	44035	SAU800532	19913	56097	EBC103570	31974	68158	PPU109309
7852	44036	SAU800319	19914	56098	EBC103571	31975	68159	PPU109348
7853	44037	SAU800503	19915	56099	EBC103572	31976	68160	PPU109349
7854	44038	SAU801192	19916	56100	EBC103573	31977	68161	PPU109350
7855	44039	SAU800701	19917	56101	EBC103585	31978	68162	PPU109363
7856	44040	SAU802081	19918	56102	EBC103602	31979	68163	PPU109370
7857	44041	SAU801220	19919	56103	EBC103604	31980	68164	PPU109373
7858	44042	SAU800545	19920	56104	EBC103609	31981	68165	PPU109423
7859	44043	SAU802581	19921	56105	EBC103610	31982	68166	PPU109454
7860	44044	SAU802580	19922	56106	EBC103611	31983	68167	PPU109466

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7861	44045	SAU801061	19923	56107	EBC103612	31984	68168	PPU109508
7862	44046	SAU801800	19924	56108	EBC103621	31985	68169	PPU109535
7863	44047	SAU802154	19925	56109	EBC103623	31986	68170	PPU109546
7864	44048	SAU800019	19926	56110	EBC103626	31987	68171	PPU109566
7865	44049	SAU801630	19927	56111	EBC103628	31988	68172	PPU109580
7866	44050	SAU801682	19928	56112	EBC103629	31989	68173	PPU109585
7867	44051	SAU801681	19929	56113	EBC103637	31990	68174	PPU109611
7868	44052	SAU802246	19930	56114	EBC103640	31991	68175	PPU109652
7869	44053	SAU802548	19931	56115	EBC103642	31992	68176	PPU109653
7870	44054	SAU800324	19932	56116	EBC103643	31993	68177	PPU109654
7871	44055	SAU801631	19933	56117	EBC103644	31994	68178	PPU109665
7872	44056	SAU802605	19934	56118	EBC103645	31995	68179	PPU109673
7873	44057	SAU800499	19935	56119	EBC103646	31996	68180	PPU109698
7874	44058	SAU801007	19936	56120	EBC103647	31997	68181	PPU109700
7875	44059	SAU801008	19937	56121	EBC103648	31998	68182	PPU109702
7876	44060	SAU800185	19938	56122	EBC103649	31999	68183	PPU109704
7877	44061	SAU802331	19939	56123	EBC103650	32000	68184	PPU109706
7878	44062	SAU801749	19940	56124	EBC103651	32001	68185	PPU109719
7879	44063	SAU801572	19941	56125	EBC103652	32002	68186	PPU109740
7880	44064	SAU801237	19942	56126	EBC103653	32003	68187	PPU109748
7881	44065	SAU802200	19943	56127	EBC103654	32004	68188	PPU109750
7882	44066	SAU300588	19944	56128	EBC103655	32005	68189	PPU109766
7883	44067	SAU502215	19945	56129	EBC103656	32006	68190	PPU109786
7884	44068	SAU201383	19946	56130	EBC103657	32007	68191	PPU109792
7885	44069	SAU802199	19947	56131	EBC103658	32008	68192	PPU109793
7886	44070	SAU801253	19948	56132	EBC103659	32009	68193	PPU109810
7887	44071	SAU802239	19949	56133	EBC103660	32010	68194	PPU109819
7888	44072	SAU801558	19950	56134	EBC103661	32011	68195	PPU109835
7889	44073	SAU801557	19951	56135	EBC103663	32012	68196	PPU109849
7890	44074	SAU802401	19952	56136	EBC103664	32013	68197	PPU109898
7891	44075	SAU203799	19953	56137	EBC103668	32014	68198	PPU109900
7892	44076	SAU802231	19954	56138	EBC103670	32015	68199	PPU109910
7893	44077	SAU800218	19955	56139	EBC103692	32016	68200	PPU109914
7894	44078	SAU800219	19956	56140	EBC103700	32017	68201	PPU109917
7895	44079	SAU802701	19957	56141	EBC103702	32018	68202	PPU109960
7896	44080	SAU802159	19958	56142	EBC103705	32019	68203	PPU109970
7897	44081	SAU801281	19959	56143	EBC103706	32020	68204	PPU109972
7898	44082	SAU801282	19960	56144	EBC103707	32021	68205	PPU109980
7899	44083	SAU800589	19961	56145	EBC103712	32022	68206	PPU109983
7900	44084	SAU800002	19962	56146	EBC103715	32023	68207	PPU109985
7901	44085	SAU800359	19963	56147	EBC103716	32024	68208	PPU109989
7902	44086	SAU802439	19964	56148	EBC103718	32025	68209	PPU109991
7903	44087	SAU801188	19965	56149	EBC103723	32026	68210	PPU110002
7904	44088	SAU801189	19966	56150	EBC103731	32027	68211	PPU110005
7905	44089	SAU802228	19967	56151	EBC103734	32028	68212	PPU110008
7906	44090	SAU802227	19968	56152	EBC103735	32029	68213	PPU110017
7907	44091	SAU801565	19969	56153	EBC103745	32030	68214	PPU110056
7908	44092	SAU801617	19970	56154	EBC103756	32031	68215	PPU110058
7909	44093	SAU802082	19971	56155	EBC103757	32032	68216	PPU110079
7910	44094	SAU800509	19972	56156	EBC103766	32033	68217	PPU110115
7911	44095	SAU802642	19973	56157	EBC103768	32034	68218	PPU110118
7912	44096	SAU802641	19974	56158	EBC103770	32035	68219	PPU110126
7913	44097	SAU802649	19975	56159	EBC103772	32036	68220	PPU110129
7914	44098	SAU800106	19976	56160	EBC103776	32037	68221	PPU110137
7915	44099	SAU801413	19977	56161	EBC103794	32038	68222	PPU110142

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7916	44100	SAU802652	19978	56162	EBC103795	32039	68223	PPU110179
7917	44101	SAU802651	19979	56163	EBC103797	32040	68224	PPU110183
7918	44102	SAU502208	19980	56164	EBC103800	32041	68225	PPU110237
7919	44103	SAU801751	19981	56165	EBC103810	32042	68226	PPU110248
7920	44104	SAU800767	19982	56166	EBC103811	32043	68227	PPU110258
7921	44105	SAU802389	19983	56167	EBC103818	32044	68228	PPU110278
7922	44106	SAU802390	19984	56168	EBC103824	32045	68229	PPU110293
7923	44107	SAU302890	19985	56169	EBC103829	32046	68230	PPU110333
7924	44108	SAU802528	19986	56170	EBC103832	32047	68231	PPU110335
7925	44109	SAU802161	19987	56171	EBC103834	32048	68232	PPU110350
7926	44110	SAU801476	19988	56172	EBC103836	32049	68233	PPU110370
7927	44111	SAU802236	19989	56173	EBC103837	32050	68234	PPU110377
7928	44112	SAU801632	19990	56174	EBC103840	32051	68235	PPU110423
7929	44113	SAU801261	19991	56175	EBC103841	32052	68236	PPU110426
7930	44114	SAU800551	19992	56176	EBC103842	32053	68237	PPU110431
7931	44115	SAU802245	19993	56177	EBC103848	32054	68238	PPU110449
7932	44116	SAU403191	19994	56178	EBC103850	32055	68239	PPU110452
7933	44117	SAU802612	19995	56179	EBC103851	32056	68240	PPU110472
7934	44118	SAU802557	19996	56180	EBC103852	32057	68241	PPU110480
7935	44119	SAU802192	19997	56181	EBC103853	32058	68242	PPU110482
7936	44120	SAU802426	19998	56182	EBC103854	32059	68243	PPU110483
7937	44121	SAU802232	19999	56183	EBC103859	32060	68244	PPU110484
7938	44122	SAU203433	20000	56184	EBC103860	32061	68245	PPU110548
7939	44123	SAU800260	20001	56185	EBC103862	32062	68246	PPU110551
7940	44124	SAU800261	20002	56186	EBC103863	32063	68247	PPU110586
7941	44125	SAU800932	20003	56187	EBC103865	32064	68248	PPU110598
7942	44126	SAU800931	20004	56188	EBC103866	32065	68249	PPU110616
7943	44127	SAU802520	20005	56189	EBC103867	32066	68250	PPU110625
7944	44128	SAU801251	20006	56190	EBC103870	32067	68251	PPU110641
7945	44129	SAU802459	20007	56191	EBC103872	32068	68252	PPU110642
7946	44130	SAU103780	20008	56192	EBC103874	32069	68253	PPU110651
7947	44131	SAU800160	20009	56193	EBC103878	32070	68254	PPU110665
7948	44132	SAU801355	20010	56194	EBC103879	32071	68255	PPU110666
7949	44133	SAU801038	20011	56195	EBC103885	32072	68256	PPU110693
7950	44134	SAU801388	20012	56196	EBC103888	32073	68257	PPU110717
7951	44135	SAU800120	20013	56197	EBC103897	32074	68258	PPU110732
7952	44136	SAU800217	20014	56198	EBC103905	32075	68259	PPU110733
7953	44137	SAU802328	20015	56199	EBC103909	32076	68260	PPU110760
7954	44138	SAU800192	20016	56200	EBC103915	32077	68261	PPU110767
7955	44139	SAU800839	20017	56201	EBC103916	32078	68262	PPU110820
7956	44140	SAU800526	20018	56202	EBC103920	32079	68263	PPU110875
7957	44141	SAU800984	20019	56203	EBC103923	32080	68264	PPU110920
7958	44142	SAU801670	20020	56204	EBC103926	32081	68265	PPU110921
7959	44143	SAU801671	20021	56205	EBC103928	32082	68266	PPU110948
7960	44144	SAU800275	20022	56206	EBC103941	32083	68267	PPU110993
7961	44145	SAU800492	20023	56207	EBC103943	32084	68268	PPU110997
7962	44146	SAU800493	20024	56208	EBC103957	32085	68269	PPU111002
7963	44147	SAU802195	20025	56209	EBC103959	32086	68270	PPU111032
7964	44148	SAU802194	20026	56210	EBC103961	32087	68271	PPU111047
7965	44149	SAU802587	20027	56211	EBC103968	32088	68272	PPU111071
7966	44150	SAU801844	20028	56212	EBC103973	32089	68273	PPU111081
7967	44151	SAU801843	20029	56213	EBC103974	32090	68274	PPU111089
7968	44152	SAU801753	20030	56214	EBC103975	32091	68275	PPU111106
7969	44153	SAU801754	20031	56215	EBC103981	32092	68276	PPU111159
7970	44154	SAU802222	20032	56216	EBC103982	32093	68277	PPU111169

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
7971	44155	SAU800605	20033	56217	EBC103983	32094	68278	PPU111206
7972	44156	SAU801554	20034	56218	EBC103984	32095	68279	PPU111209
7973	44157	SAU801668	20035	56219	EBC103989	32096	68280	PPU111253
7974	44158	SAU802049	20036	56220	EBC103990	32097	68281	PPU111281
7975	44159	SAU802681	20037	56221	EBC103991	32098	68282	PPU111285
7976	44160	SAU802181	20038	56222	EBC103996	32099	68283	PPU111291
7977	44161	SAU801646	20039	56223	EBC103997	32100	68284	PPU111301
7978	44162	SAU800680	20040	56224	EBC103998	32101	68285	PPU111305
7979	44163	SAU800782	20041	56225	EBC104003	32102	68286	PPU111319
7980	44164	SAU801812	20042	56226	EBC104005	32103	68287	PPU111322
7981	44165	SAU802473	20043	56227	EBC104008	32104	68288	PPU111323
7982	44166	SAU801605	20044	56228	EBC104017	32105	68289	PPU111359
7983	44167	SAU802241	20045	56229	EBC104020	32106	68290	PPU111360
7984	44168	SAU802442	20046	56230	EBC104021	32107	68291	PPU111361
7985	44169	SAU800123	20047	56231	EBC104045	32108	68292	PPU111376
7986	44170	SAU801240	20048	56232	EBC104047	32109	68293	PPU111378
7987	44171	SAU801131	20049	56233	EBC104048	32110	68294	PPU111381
7988	44172	SAU801132	20050	56234	EBC104053	32111	68295	PPU111382
7989	44173	SAU801727	20051	56235	EBC104062	32112	68296	PPU111397
7990	44174	SAU801726	20052	56236	EBC104063	32113	68297	PPU111424
7991	44175	SAU800286	20053	56237	EBC104066	32114	68298	PPU111425
7992	44176	SAU800535	20054	56238	EBC104067	32115	68299	PPU111438
7993	44177	SAU801679	20055	56239	EBC104070	32116	68300	PPU111450
7994	44178	SAU802226	20056	56240	EBC104077	32117	68301	PPU111473
7995	44179	SAU802686	20057	56241	EBC104078	32118	68302	PPU111491
7996	44180	SAU801303	20058	56242	EBC104084	32119	68303	PPU111511
7997	44181	SAU800089	20059	56243	EBC104085	32120	68304	PPU111521
7998	44182	SAU800325	20060	56244	EBC104086	32121	68305	PPU111526
7999	44183	SAU801279	20061	56245	EBC104087	32122	68306	PPU111541
8000	44184	SAU801491	20062	56246	EBC104095	32123	68307	PPU111548
8001	44185	SAU800367	20063	56247	EBC104108	32124	68308	PPU111596
8002	44186	SAU800232	20064	56248	EBC104114	32125	68309	PPU111611
8003	44187	SAU801180	20065	56249	EBC104124	32126	68310	PPU111662
8004	44188	SAU801170	20066	56250	EBC104133	32127	68311	PPU111663
8005	44189	SAU800467	20067	56251	EBC104135	32128	68312	PPU111666
8006	44190	SAU800161	20068	56252	EBC104137	32129	68313	PPU111671
8007	44191	SAU802047	20069	56253	EBC104143	32130	68314	PPU111700
8008	44192	SAU801493	20070	56254	EBC104147	32131	68315	PPU111733
8009	44193	SAU802468	20071	56255	EBC104151	32132	68316	PPU111736
8010	44194	SAU801898	20072	56256	EBC104163	32133	68317	PPU111744
8011	44195	SAU800111	20073	56257	EBC104170	32134	68318	PPU111756
8012	44196	SAU802071	20074	56258	EBC104174	32135	68319	PPU111772
8013	44197	SAU802070	20075	56259	EBC104175	32136	68320	PPU111774
8014	44198	SAU800732	20076	56260	EBC104183	32137	68321	PPU111777
8015	44199	SAU802235	20077	56261	EBC104185	32138	68322	PPU111778
8016	44200	SAU800566	20078	56262	EBC104189	32139	68323	PPU111782
8017	44201	SAU800287	20079	56263	EBC104191	32140	68324	PPU111785
8018	44202	SAU200106	20080	56264	EBC104194	32141	68325	PPU111797
8019	44203	SAU200237	20081	56265	EBC104206	32142	68326	PPU111804
8020	44204	SAU802646	20082	56266	EBC104210	32143	68327	PPU111815
8021	44205	SAU800514	20083	56267	EBC104211	32144	68328	PPU111816
8022	44206	SAU800719	20084	56268	EBC104212	32145	68329	PPU111837
8023	44207	SAU801439	20085	56269	EBC104213	32146	68330	PPU111873
8024	44208	SAU801663	20086	56270	EBC104214	32147	68331	PPU111874
8025	44209	SAU800366	20087	56271	EBC104218	32148	68332	PPU111883

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8026	44210	SAU801084	20088	56272	EBC104220	32149	68333	PPU111885
8027	44211	SAU801181	20089	56273	EBC104228	32150	68334	PPU111918
8028	44212	SAU800491	20090	56274	EBC104229	32151	68335	PPU111952
8029	44213	SAU800530	20091	56275	EBC104233	32152	68336	PPU112031
8030	44214	SAU801526	20092	56276	EBC104234	32153	68337	PPU112044
8031	44215	SAU802083	20093	56277	EBC104237	32154	68338	PPU112071
8032	44216	SAU801892	20094	56278	EBC104239	32155	68339	PPU112081
8033	44217	SAU801891	20095	56279	EBC104245	32156	68340	PPU112091
8034	44218	SAU801934	20096	56280	EBC104246	32157	68341	PPU112106
8035	44219	SAU801933	20097	56281	EBC104247	32158	68342	PPU112123
8036	44220	SAU801597	20098	56282	EBC104273	32159	68343	PPU112124
8037	44221	SAU203732	20099	56283	EBC104279	32160	68344	PPU112128
8038	44222	SAU801733	20100	56284	EBC104285	32161	68345	PPU112131
8039	44223	SAU800304	20101	56285	EBC104291	32162	68346	PPU112135
8040	44224	SAU203500	20102	56286	EBC104300	32163	68347	PPU112163
8041	44225	SAU800952	20103	56287	EBC104303	32164	68348	PPU112195
8042	44226	SAU800951	20104	56288	EBC104323	32165	68349	PPU112217
8043	44227	SAU801426	20105	56289	EBC104328	32166	68350	PPU112220
8044	44228	SAU802250	20106	56290	EBC104331	32167	68351	PPU112224
8045	44229	SAU801201	20107	56291	EBC104340	32168	68352	PPU112249
8046	44230	SAU802075	20108	56292	EBC104342	32169	68353	PPU112260
8047	44231	SAU802273	20109	56293	EBC104357	32170	68354	PPU112306
8048	44232	SAU802545	20110	56294	EBC104358	32171	68355	PPU112339
8049	44233	SAU801645	20111	56295	EBC104360	32172	68356	PPU112340
8050	44234	SAU802130	20112	56296	EBC104368	32173	68357	PPU112346
8051	44235	SAU800742	20113	56297	EBC104374	32174	68358	PPU112349
8052	44236	SAU801901	20114	56298	EBC104380	32175	68359	PPU112371
8053	44237	SAU800962	20115	56299	EBC104389	32176	68360	PPU112386
8054	44238	SAU800699	20116	56300	EBC104413	32177	68361	PPU112431
8055	44239	SAU801678	20117	56301	EBC104449	32178	68362	PPU112458
8056	44240	SAU801567	20118	56302	EBC104455	32179	68363	PPU112476
8057	44241	SAU801081	20119	56303	EBC104459	32180	68364	PPU112503
8058	44242	SAU800641	20120	56304	EBC104465	32181	68365	PPU112554
8059	44243	SAU801408	20121	56305	EBC104468	32182	68366	PPU112591
8060	44244	SAU800524	20122	56306	EBC104469	32183	68367	PRT100002
8061	44245	SAU800523	20123	56307	EBC104471	32184	68368	PRT100020
8062	44246	SAU202690	20124	56308	EBC104473	32185	68369	PRT100022
8063	44247	SAU801905	20125	56309	EBC104475	32186	68370	PRT100032
8064	44248	SAU800920	20126	56310	EBC104478	32187	68371	PRT100038
8065	44249	SAU802109	20127	56311	EBC104489	32188	68372	PRT100044
8066	44250	SAU801083	20128	56312	EBC104495	32189	68373	PRT100056
8067	44251	SAU800431	20129	56313	EBC104502	32190	68374	PRT100064
8068	44252	SAU100580	20130	56314	EBC104504	32191	68375	PRT100066
8069	44253	SAU100905	20131	56315	EBC104505	32192	68376	PRT100070
8070	44254	SAU200260	20132	56316	EBC104507	32193	68377	PRT100071
8071	44255	SAU501625	20133	56317	EBC104517	32194	68378	PRT100074
8072	44256	SAU800760	20134	56318	EBC104519	32195	68379	PRT100078
8073	44257	SAU801182	20135	56319	EBC104522	32196	68380	PRT100105
8074	44258	SAU801021	20136	56320	EBC104524	32197	68381	PRT100107
8075	44259	SAU801019	20137	56321	EBC104530	32198	68382	PRT100115
8076	44260	SAU801020	20138	56322	EBC104539	32199	68383	PRT100118
8077	44261	SAU800248	20139	56323	EBC104555	32200	68384	PRT100130
8078	44262	SAU800250	20140	56324	EBC104560	32201	68385	PRT100132
8079	44263	SAU800249	20141	56325	EBC104561	32202	68386	PRT100138
8080	44264	SAU801321	20142	56326	EBC104565	32203	68387	PRT100140

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8081	44265	SAU801322	20143	56327	EBC104566	32204	68388	PRT100142
8082	44266	SAU800733	20144	56328	EBC104569	32205	68389	PRT100152
8083	44267	SAU302622	20145	56329	EBC104570	32206	68390	PRT100154
8084	44268	SAU103443	20146	56330	EBC104573	32207	68391	PRT100159
8085	44269	SAU802004	20147	56331	EBC104578	32208	68392	PRT100160
8086	44270	SAU802171	20148	56332	EBC104587	32209	68393	PRT100163
8087	44271	SAU802170	20149	56333	EBC104589	32210	68394	PRT100166
8088	44272	SAU801096	20150	56334	EBC104604	32211	68395	PRT100169
8089	44273	SAU103441	20151	56335	EBC104695	32212	68396	PRT100179
8090	44274	SAU801701	20152	56336	EBC104702	32213	68397	PRT100191
8091	44275	SAU801700	20153	56337	EBC104708	32214	68398	PRT100195
8092	44276	SAU801392	20154	56338	EBC104737	32215	68399	PRT100202
8093	44277	SAU800018	20155	56339	EBC104763	32216	68400	PRT100213
8094	44278	SAU800525	20156	56340	EBC104787	32217	68401	PRT100222
8095	44279	SAU800170	20157	56341	EBC104807	32218	68402	PRT100243
8096	44280	SAU801235	20158	56342	EBC104864	32219	68403	PRT100252
8097	44281	SAU801236	20159	56343	EBC104888	32220	68404	PRT100253
8098	44282	SAU800322	20160	56344	EBC104891	32221	68405	PRT100254
8099	44283	SAU802191	20161	56345	EBC104912	32222	68406	PRT100255
8100	44284	SAU802190	20162	56346	EBC104921	32223	68407	PRT100263
8101	44285	SAU800842	20163	56347	EBC104962	32224	68408	PRT100267
8102	44286	SAU802090	20164	56348	EBC104972	32225	68409	PRT100288
8103	44287	SAU800845	20165	56349	EBC104973	32226	68410	PRT100296
8104	44288	SAU802124	20166	56350	EBC105012	32227	68411	PRT100305
8105	44289	SAU103735	20167	56351	EBC105028	32228	68412	PRT100321
8106	44290	SAU801781	20168	56352	EBC105029	32229	68413	PRT100323
8107	44291	SAU802186	20169	56353	EBC105058	32230	68414	PRT100324
8108	44292	SAU802335	20170	56354	EBC105166	32231	68415	PRT100325
8109	44293	SAU800513	20171	56355	EBC105172	32232	68416	PRT100350
8110	44294	SAU801241	20172	56356	EBC105222	32233	68417	PRT100356
8111	44295	SAU801770	20173	56357	EBC105295	32234	68418	PRT100357
8112	44296	SAU801769	20174	56358	EBC105348	32235	68419	PRT100374
8113	44297	SAU800738	20175	56359	EBC105499	32236	68420	PRT100386
8114	44298	SAU800737	20176	56360	EBC105501	32237	68421	PRT100403
8115	44299	SAU800512	20177	56361	EBC105567	32238	68422	PRT100405
8116	44300	SAU800534	20178	56362	EBC105759	32239	68423	PRT100424
8117	44301	SAU802207	20179	56363	EBC105792	32240	68424	PRT100444
8118	44302	SAU802206	20180	56364	EBC105849	32241	68425	PRT100460
8119	44303	SAU801458	20181	56365	EBC105902	32242	68426	PRT100474
8120	44304	SAU801457	20182	56366	EBC106015	32243	68427	PRT100475
8121	44305	SAU801260	20183	56367	EBC106045	32244	68428	PRT100486
8122	44306	SAU302812	20184	56368	EBC106068	32245	68429	PRT100487
8123	44307	SAU802491	20185	56369	EBC106113	32246	68430	PRT100489
8124	44308	SAU801596	20186	56370	EBC106188	32247	68431	PRT100490
8125	44309	SAU802599	20187	56371	EBC106191	32248	68432	PRT100492
8126	44310	SAU800759	20188	56372	EBC106218	32249	68433	PRT100502
8127	44311	SAU801790	20189	56373	EBC106332	32250	68434	PRT100504
8128	44312	SAU800529	20190	56374	EBC106360	32251	68435	PRT100514
8129	44313	SAU801552	20191	56375	EBC106405	32252	68436	PRT100516
8130	44314	SAU800253	20192	56376	EBC106435	32253	68437	PRT100522
8131	44315	SAU801473	20193	56377	EBC106483	32254	68438	PRT100528
8132	44316	SAU802567	20194	56378	EBC106485	32255	68439	PRT100531
8133	44317	SAU802452	20195	56379	EBC106749	32256	68440	PRT100538
8134	44318	SAU302793	20196	56380	EBC106796	32257	68441	PRT100542
8135	44319	SAU800776	20197	56381	EBC106824	32258	68442	PRT100545

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8136	44320	SAU800777	20198	56382	EBC106956	32259	68443	PRT100549
8137	44321	SAU802627	20199	56383	EBC107113	32260	68444	PRT100553
8138	44322	SAU801831	20200	56384	EBC107120	32261	68445	PRT100554
8139	44323	SAU802308	20201	56385	EBC107179	32262	68446	PRT100555
8140	44324	SAU800562	20202	56386	EBC107209	32263	68447	PRT100556
8141	44325	SAU802601	20203	56387	EBC107253	32264	68448	PRT100557
8142	44326	SAU800811	20204	56388	EBC107300	32265	68449	PRT100558
8143	44327	SAU801912	20205	56389	EBC107301	32266	68450	PRT100559
8144	44328	SAU801134	20206	56390	EBC107404	32267	68451	PRT100561
8145	44329	SAU801135	20207	56391	EBC107494	32268	68452	PRT100566
8146	44330	SAU801505	20208	56392	EBC107569	32269	68453	PRT100575
8147	44331	SAU302611	20209	56393	EBC107735	32270	68454	PRT100582
8148	44332	SAU302882	20210	56394	EBC107794	32271	68455	PRT100590
8149	44333	SAU802365	20211	56395	EBC107855	32272	68456	PRT100592
8150	44334	SAU801599	20212	56396	EBC108003	32273	68457	PRT100600
8151	44335	SAU801908	20213	56397	ECO100003	32274	68458	PRT100612
8152	44336	SAU802152	20214	56398	ECO100014	32275	68459	PRT100619
8153	44337	SAU800312	20215	56399	ECO100016	32276	68460	PRT100620
8154	44338	SAU802112	20216	56400	ECO100022	32277	68461	PRT100621
8155	44339	SAU802111	20217	56401	ECO100031	32278	68462	PRT100628
8156	44340	SAU800830	20218	56402	ECO100048	32279	68463	PRT100632
8157	44341	SAU800829	20219	56403	ECO100051	32280	68464	PRT100638
8158	44342	SAU801269	20220	56404	ECO100064	32281	68465	PRT100644
8159	44343	SAU801703	20221	56405	ECO100072	32282	68466	PRT100650
8160	44344	SAU800255	20222	56406	ECO100077	32283	68467	PRT100660
8161	44345	SAU800256	20223	56407	ECO100078	32284	68468	PRT100665
8162	44346	SAU802076	20224	56408	ECO100082	32285	68469	PRT100667
8163	44347	SAU801738	20225	56409	ECO100084	32286	68470	PRT100675
8164	44348	SAU800344	20226	56410	ECO100085	32287	68471	PRT100691
8165	44349	SAU802555	20227	56411	ECO100086	32288	68472	PRT100704
8166	44350	SAU801523	20228	56412	ECO100087	32289	68473	PRT100706
8167	44351	SAU800434	20229	56413	ECO100088	32290	68474	PRT100707
8168	44352	SAU800156	20230	56414	ECO100089	32291	68475	PRT100708
8169	44353	SAU102585	20231	56415	ECO100090	32292	68476	PRT100712
8170	44354	SAU801396	20232	56416	ECO100091	32293	68477	PRT100717
8171	44355	SAU800117	20233	56417	ECO100098	32294	68478	PRT100729
8172	44356	SAU800116	20234	56418	ECO100134	32295	68479	PRT100733
8173	44357	SAU801771	20235	56419	ECO100143	32296	68480	PRT100735
8174	44358	SAU802613	20236	56420	ECO100149	32297	68481	PRT100737
8175	44359	SAU800489	20237	56421	ECO100159	32298	68482	PRT100741
8176	44360	SAU802689	20238	56422	ECO100162	32299	68483	PRT100743
8177	44361	SAU802418	20239	56423	ECO100166	32300	68484	PRT100746
8178	44362	SAU802133	20240	56424	ECO100172	32301	68485	PRT100747
8179	44363	SAU801521	20241	56425	ECO100174	32302	68486	PRT100749
8180	44364	SAU801243	20242	56426	ECO100175	32303	68487	PRT100750
8181	44365	SAU800020	20243	56427	ECO100182	32304	68488	PRT100771
8182	44366	SAU802359	20244	56428	ECO100187	32305	68489	PRT100774
8183	44367	SAU802360	20245	56429	ECO100188	32306	68490	PRT100781
8184	44368	SAU202256	20246	56430	ECO100251	32307	68491	PRT100789
8185	44369	SAU800320	20247	56431	ECO100252	32308	68492	PRT100790
8186	44370	SAU801687	20248	56432	ECO100260	32309	68493	PRT100791
8187	44371	SAU800138	20249	56433	ECO100266	32310	68494	PRT100792
8188	44372	SAU802137	20250	56434	ECO100267	32311	68495	PRT100794
8189	44373	SAU801297	20251	56435	ECO100288	32312	68496	PRT100799
8190	44374	SAU801296	20252	56436	ECO100289	32313	68497	PRT100815

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8191	44375	SAU201900	20253	56437	ECO100303	32314	68498	PRT100819
8192	44376	SAU802662	20254	56438	ECO100304	32315	68499	PRT100820
8193	44377	SAU802464	20255	56439	ECO100325	32316	68500	PRT100822
8194	44378	SAU800511	20256	56440	ECO100334	32317	68501	PRT100826
8195	44379	SAU802120	20257	56441	ECO100373	32318	68502	PRT100857
8196	44380	SAU800550	20258	56442	ECO100375	32319	68503	PRT100858
8197	44381	SAU800472	20259	56443	ECO100384	32320	68504	PRT100873
8198	44382	SAU800473	20260	56444	ECO100389	32321	68505	PRT100883
8199	44383	SAU800317	20261	56445	ECO100392	32322	68506	PRT100887
8200	44384	SAU800101	20262	56446	ECO100393	32323	68507	PRT100890
8201	44385	SAU800186	20263	56447	ECO100397	32324	68508	PRT100901
8202	44386	SAU801450	20264	56448	ECO100398	32325	68509	PRT100903
8203	44387	SAU800538	20265	56449	ECO100406	32326	68510	PRT100905
8204	44388	SAU800601	20266	56450	ECO100412	32327	68511	PRT100919
8205	44389	SAU801025	20267	56451	ECO100413	32328	68512	PRT100920
8206	44390	SAU802368	20268	56452	ECO100423	32329	68513	PRT100936
8207	44391	SAU801114	20269	56453	ECO100432	32330	68514	PRT100948
8208	44392	SAU802400	20270	56454	ECO100461	32331	68515	PRT100952
8209	44393	SAU801913	20271	56455	ECO100462	32332	68516	PRT100957
8210	44394	SAU801697	20272	56456	ECO100463	32333	68517	PRT100958
8211	44395	SAU802221	20273	56457	ECO100471	32334	68518	PRT100966
8212	44396	SAU802371	20274	56458	ECO100486	32335	68519	PRT100970
8213	44397	SAU802372	20275	56459	ECO100503	32336	68520	PRT100974
8214	44398	SAU302737	20276	56460	ECO100517	32337	68521	PRT100975
8215	44399	SAU801636	20277	56461	ECO100542	32338	68522	PRT100983
8216	44400	SAU801530	20278	56462	ECO100546	32339	68523	PRT100988
8217	44401	SAU801529	20279	56463	ECO100548	32340	68524	PRT101005
8218	44402	SAU802251	20280	56464	ECO100571	32341	68525	PRT101016
8219	44403	SAU801484	20281	56465	ECO100576	32342	68526	PRT101022
8220	44404	SAU802469	20282	56466	ECO100578	32343	68527	PRT101027
8221	44405	SAU800015	20283	56467	ECO100595	32344	68528	PRT101028
8222	44406	SAU801537	20284	56468	ECO100605	32345	68529	PRT101034
8223	44407	SAU800555	20285	56469	ECO100606	32346	68530	PRT101036
8224	44408	SAU802481	20286	56470	ECO100618	32347	68531	PRT101043
8225	44409	SAU801695	20287	56471	ECO100626	32348	68532	PRT101047
8226	44410	SAU802113	20288	56472	ECO100628	32349	68533	PRT101050
8227	44411	SAU802293	20289	56473	ECO100641	32350	68534	PRT101051
8228	44412	SAU802292	20290	56474	ECO100646	32351	68535	PRT101055
8229	44413	SAU801274	20291	56475	ECO100657	32352	68536	PRT101058
8230	44414	SAU801232	20292	56476	ECO100660	32353	68537	PRT101067
8231	44415	SAU801466	20293	56477	ECO100678	32354	68538	PRT101070
8232	44416	SAU801648	20294	56478	ECO100679	32355	68539	PRT101071
8233	44417	SAU800765	20295	56479	ECO100680	32356	68540	PRT101073
8234	44418	SAU800766	20296	56480	ECO100686	32357	68541	PRT101086
8235	44419	SAU801330	20297	56481	ECO100696	32358	68542	PRT101087
8236	44420	SAU801331	20298	56482	ECO100709	32359	68543	PRT101090
8237	44421	SAU801694	20299	56483	ECO100722	32360	68544	PRT101099
8238	44422	SAU800975	20300	56484	ECO100739	32361	68545	PRT101100
8239	44423	SAU800968	20301	56485	ECO100750	32362	68546	PRT101102
8240	44424	SAU801842	20302	56486	ECO100751	32363	68547	PRT101111
8241	44425	SAU800024	20303	56487	ECO100756	32364	68548	PRT101139
8242	44426	SAU800671	20304	56488	ECO100758	32365	68549	PRT101140
8243	44427	SAU802341	20305	56489	ECO100770	32366	68550	PRT101141
8244	44428	SAU800008	20306	56490	ECO100788	32367	68551	PRT101142
8245	44429	SAU800190	20307	56491	ECO100789	32368	68552	PRT101147

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8246	44430	SAU800316	20308	56492	ECO100796	32369	68553	PRT101157
8247	44431	SAU802518	20309	56493	ECO100803	32370	68554	PRT101158
8248	44432	SAU802087	20310	56494	ECO100805	32371	68555	PRT101163
8249	44433	SAU800637	20311	56495	ECO100817	32372	68556	PRT101170
8250	44434	SAU800335	20312	56496	ECO100833	32373	68557	PRT101174
8251	44435	SAU801394	20313	56497	ECO100847	32374	68558	PRT101177
8252	44436	SAU801729	20314	56498	ECO100859	32375	68559	PRT101178
8253	44437	SAU801819	20315	56499	ECO100865	32376	68560	PRT101181
8254	44438	SAU801003	20316	56500	ECO100879	32377	68561	PRT101183
8255	44439	SAU801001	20317	56501	ECO100882	32378	68562	PRT101184
8256	44440	SAU801002	20318	56502	ECO100889	32379	68563	PRT101197
8257	44441	SAU802056	20319	56503	ECO100911	32380	68564	PRT101208
8258	44442	SAU802288	20320	56504	ECO100918	32381	68565	PRT101210
8259	44443	SAU802290	20321	56505	ECO100924	32382	68566	PRT101213
8260	44444	SAU802444	20322	56506	ECO100930	32383	68567	PRT101236
8261	44445	SAU800254	20323	56507	ECO100942	32384	68568	PRT101240
8262	44446	SAU801489	20324	56508	ECO100955	32385	68569	PRT101241
8263	44447	SAU802467	20325	56509	ECO100985	32386	68570	PRT101242
8264	44448	SAU801885	20326	56510	ECO100991	32387	68571	PRT101243
8265	44449	SAU802628	20327	56511	ECO100993	32388	68572	PRT101244
8266	44450	SAU802522	20328	56512	ECO100999	32389	68573	PRT101246
8267	44451	SAU801310	20329	56513	ECO101018	32390	68574	PRT101247
8268	44452	SAU800323	20330	56514	ECO101022	32391	68575	PRT101248
8269	44453	SAU802488	20331	56515	ECO101028	32392	68576	PRT101259
8270	44454	SAU801419	20332	56516	ECO101029	32393	68577	PRT101268
8271	44455	SAU801238	20333	56517	ECO101042	32394	68578	PRT101269
8272	44456	SAU801755	20334	56518	ECO101064	32395	68579	PRT101271
8273	44457	SAU800561	20335	56519	ECO101065	32396	68580	PRT101272
8274	44458	SAU802590	20336	56520	ECO101071	32397	68581	PRT101283
8275	44459	SAU801375	20337	56521	ECO101073	32398	68582	PRT101284
8276	44460	SAU801259	20338	56522	ECO101075	32399	68583	PRT101288
8277	44461	SAU802658	20339	56523	ECO101080	32400	68584	PRT101295
8278	44462	SAU802472	20340	56524	ECO101082	32401	68585	PRT101296
8279	44463	SAU802184	20341	56525	ECO101087	32402	68586	PRT101302
8280	44464	SAU802183	20342	56526	ECO101100	32403	68587	PRT101304
8281	44465	SAU800205	20343	56527	ECO101106	32404	68588	PRT101305
8282	44466	SAU800838	20344	56528	ECO101109	32405	68589	PRT101306
8283	44467	SAU800251	20345	56529	ECO101129	32406	68590	PRT101308
8284	44468	SAU801788	20346	56530	ECO101176	32407	68591	PRT101310
8285	44469	SAU800208	20347	56531	ECO101209	32408	68592	PRT101312
8286	44470	SAU202691	20348	56532	ECO101210	32409	68593	PRT101313
8287	44471	SAU801144	20349	56533	ECO101212	32410	68594	PRT101349
8288	44472	SAU201288	20350	56534	ECO101217	32411	68595	PRT101358
8289	44473	SAU800479	20351	56535	ECO101223	32412	68596	PRT101359
8290	44474	SAU800480	20352	56536	ECO101234	32413	68597	PRT101362
8291	44475	SAU801593	20353	56537	ECO101237	32414	68598	PRT101365
8292	44476	SAU801801	20354	56538	ECO101242	32415	68599	PRT101376
8293	44477	SAU802346	20355	56539	ECO101245	32416	68600	PRT101378
8294	44478	SAU801109	20356	56540	ECO101249	32417	68601	PRT101385
8295	44479	SAU801353	20357	56541	ECO101286	32418	68602	PRT101388
8296	44480	SAU800456	20358	56542	ECO101291	32419	68603	PRT101394
8297	44481	SAU800151	20359	56543	ECO101302	32420	68604	PRT101395
8298	44482	SAU802107	20360	56544	ECO101306	32421	68605	PRT101397
8299	44483	SAU300619	20361	56545	ECO101410	32422	68606	PRT101407
8300	44484	SAU800148	20362	56546	ECO101420	32423	68607	PRT101411

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8301	44485	SAU801669	20363	56547	ECO101427	32424	68608	PRT101421
8302	44486	SAU801060	20364	56548	ECO101449	32425	68609	PRT101423
8303	44487	SAU104011	20365	56549	ECO101465	32426	68610	PRT101425
8304	44488	SAU801919	20366	56550	ECO101469	32427	68611	PRT101434
8305	44489	SAU800520	20367	56551	ECO101470	32428	68612	PRT101439
8306	44490	ABA100008	20368	56552	ECO101483	32429	68613	PRT101447
8307	44491	ABA100013	20369	56553	ECO101491	32430	68614	PRT101464
8308	44492	ABA100014	20370	56554	ECO101511	32431	68615	PRT101476
8309	44493	ABA100027	20371	56555	ECO101518	32432	68616	PRT101480
8310	44494	ABA100033	20372	56556	ECO101520	32433	68617	PRT101484
8311	44495	ABA100036	20373	56557	ECO101555	32434	68618	PRT101487
8312	44496	ABA100041	20374	56558	ECO101566	32435	68619	PRT101493
8313	44497	ABA100053	20375	56559	ECO101573	32436	68620	PRT101495
8314	44498	ABA100054	20376	56560	ECO101607	32437	68621	PRT101496
8315	44499	ABA100056	20377	56561	ECO101619	32438	68622	PRT101499
8316	44500	ABA100059	20378	56562	ECO101632	32439	68623	PRT101500
8317	44501	ABA100062	20379	56563	ECO101644	32440	68624	PRT101501
8318	44502	ABA100079	20380	56564	ECO101650	32441	68625	PRT101519
8319	44503	ABA100080	20381	56565	ECO101660	32442	68626	PRT101527
8320	44504	ABA100081	20382	56566	ECO101661	32443	68627	PRT101534
8321	44505	ABA100082	20383	56567	ECO101667	32444	68628	PRT101541
8322	44506	ABA100083	20384	56568	ECO101681	32445	68629	PRT101542
8323	44507	ABA100084	20385	56569	ECO101682	32446	68630	PRT101551
8324	44508	ABA100085	20386	56570	ECO101691	32447	68631	PRT101552
8325	44509	ABA100086	20387	56571	ECO101704	32448	68632	PRT101562
8326	44510	ABA100087	20388	56572	ECO101705	32449	68633	PRT101564
8327	44511	ABA100088	20389	56573	ECO101708	32450	68634	PRT101565
8328	44512	ABA100092	20390	56574	ECO101716	32451	68635	PRT101586
8329	44513	ABA100096	20391	56575	ECO101731	32452	68636	PRT101595
8330	44514	ABA100098	20392	56576	ECO101733	32453	68637	PRT101596
8331	44515	ABA100100	20393	56577	ECO101744	32454	68638	PRT101600
8332	44516	ABA100104	20394	56578	ECO101747	32455	68639	PRT101607
8333	44517	ABA100105	20395	56579	ECO101820	32456	68640	PRT101632
8334	44518	ABA100106	20396	56580	ECO101824	32457	68641	PRT101651
8335	44519	ABA100107	20397	56581	ECO101835	32458	68642	PRT101652
8336	44520	ABA100108	20398	56582	ECO101877	32459	68643	PRT101653
8337	44521	ABA100109	20399	56583	ECO101881	32460	68644	PRT101657
8338	44522	ABA100110	20400	56584	ECO101904	32461	68645	PRT101661
8339	44523	ABA100111	20401	56585	ECO101931	32462	68646	PRT101668
8340	44524	ABA100112	20402	56586	ECO101936	32463	68647	PRT101670
8341	44525	ABA100113	20403	56587	ECO101970	32464	68648	PRT101679
8342	44526	ABA100117	20404	56588	ECO101986	32465	68649	PRT101697
8343	44527	ABA100118	20405	56589	ECO101988	32466	68650	PRT101698
8344	44528	ABA100121	20406	56590	ECO102005	32467	68651	PRT101699
8345	44529	ABA100122	20407	56591	ECO102009	32468	68652	PRT101704
8346	44530	ABA100124	20408	56592	ECO102019	32469	68653	PRT101707
8347	44531	ABA100126	20409	56593	ECO102028	32470	68654	PRT101718
8348	44532	ABA100127	20410	56594	ECO102034	32471	68655	PRT101726
8349	44533	ABA100128	20411	56595	ECO102045	32472	68656	PRT101728
8350	44534	ABA100129	20412	56596	ECO102050	32473	68657	PRT101730
8351	44535	ABA100130	20413	56597	ECO102055	32474	68658	PRT101741
8352	44536	ABA100134	20414	56598	ECO102063	32475	68659	PRT101751
8353	44537	ABA100135	20415	56599	ECO102064	32476	68660	PRT101754
8354	44538	ABA100136	20416	56600	ECO102073	32477	68661	PRT101762
8355	44539	ABA100144	20417	56601	ECO102077	32478	68662	PRT101765

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8356	44540	ABA100149	20418	56602	ECO102085	32479	68663	PRT101773
8357	44541	ABA100150	20419	56603	ECO102088	32480	68664	PRT101775
8358	44542	ABA100156	20420	56604	ECO102099	32481	68665	PRT101784
8359	44543	ABA100157	20421	56605	ECO102108	32482	68666	PRT101790
8360	44544	ABA100162	20422	56606	ECO102118	32483	68667	PRT101792
8361	44545	ABA100163	20423	56607	ECO102124	32484	68668	PRT101793
8362	44546	ABA100164	20424	56608	ECO102126	32485	68669	PRT101794
8363	44547	ABA100166	20425	56609	ECO102127	32486	68670	PRT101796
8364	44548	ABA100167	20426	56610	ECO102128	32487	68671	PRT101803
8365	44549	ABA100169	20427	56611	ECO102142	32488	68672	PRT101807
8366	44550	ABA100173	20428	56612	ECO102143	32489	68673	PRT101816
8367	44551	ABA100184	20429	56613	ECO102148	32490	68674	PRT101830
8368	44552	ABA100187	20430	56614	ECO102150	32491	68675	PRT101841
8369	44553	ABA100192	20431	56615	ECO102167	32492	68676	PRT101847
8370	44554	ABA100197	20432	56616	ECO102168	32493	68677	PRT101849
8371	44555	ABA100200	20433	56617	ECO102189	32494	68678	PRT101866
8372	44556	ABA100205	20434	56618	ECO102236	32495	68679	PRT101873
8373	44557	ABA100211	20435	56619	ECO102242	32496	68680	PRT101879
8374	44558	ABA100225	20436	56620	ECO102243	32497	68681	PRT101880
8375	44559	ABA100229	20437	56621	ECO102256	32498	68682	PRT101881
8376	44560	ABA100233	20438	56622	ECO102262	32499	68683	PRT101882
8377	44561	ABA100240	20439	56623	ECO102287	32500	68684	PRT101899
8378	44562	ABA100252	20440	56624	ECO102296	32501	68685	PRT101901
8379	44563	ABA100260	20441	56625	ECO102311	32502	68686	PRT101929
8380	44564	ABA100261	20442	56626	ECO102338	32503	68687	PRT101944
8381	44565	ABA100265	20443	56627	ECO102349	32504	68688	PRT101954
8382	44566	ABA100269	20444	56628	ECO102362	32505	68689	PRT101955
8383	44567	ABA100270	20445	56629	ECO102365	32506	68690	PRT101956
8384	44568	ABA100276	20446	56630	ECO102367	32507	68691	PRT101957
8385	44569	ABA100279	20447	56631	ECO102379	32508	68692	PRT101963
8386	44570	ABA100283	20448	56632	ECO102380	32509	68693	PRT101971
8387	44571	ABA100286	20449	56633	ECO102392	32510	68694	PRT101978
8388	44572	ABA100290	20450	56634	ECO102419	32511	68695	PRT101996
8389	44573	ABA100298	20451	56635	ECO102449	32512	68696	PRT101998
8390	44574	ABA100304	20452	56636	ECO102458	32513	68697	PRT102018
8391	44575	ABA100308	20453	56637	ECO102460	32514	68698	PRT102026
8392	44576	ABA100310	20454	56638	ECO102465	32515	68699	PRT102028
8393	44577	ABA100316	20455	56639	ECO102480	32516	68700	PRT102031
8394	44578	ABA100317	20456	56640	ECO102482	32517	68701	PRT102034
8395	44579	ABA100318	20457	56641	ECO102502	32518	68702	PRT102059
8396	44580	ABA100324	20458	56642	ECO102509	32519	68703	PRT102061
8397	44581	ABA100328	20459	56643	ECO102514	32520	68704	PRT102068
8398	44582	ABA100331	20460	56644	ECO102517	32521	68705	PRT102070
8399	44583	ABA100352	20461	56645	ECO102519	32522	68706	PRT102073
8400	44584	ABA100361	20462	56646	ECO102539	32523	68707	PRT102075
8401	44585	ABA100363	20463	56647	ECO102558	32524	68708	PRT102078
8402	44586	ABA100364	20464	56648	ECO102567	32525	68709	PRT102085
8403	44587	ABA100365	20465	56649	ECO102590	32526	68710	PRT102088
8404	44588	ABA100367	20466	56650	ECO102606	32527	68711	PRT102089
8405	44589	ABA100372	20467	56651	ECO102608	32528	68712	PRT102094
8406	44590	ABA100375	20468	56652	ECO102620	32529	68713	PRT102104
8407	44591	ABA100377	20469	56653	ECO102621	32530	68714	PRT102105
8408	44592	ABA100380	20470	56654	ECO102629	32531	68715	PRT102108
8409	44593	ABA100381	20471	56655	ECO102667	32532	68716	PRT102120
8410	44594	ABA100383	20472	56656	ECO102673	32533	68717	PRT102124

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8411	44595	ABA100387	20473	56657	ECO102686	32534	68718	PRT102170
8412	44596	ABA100392	20474	56658	ECO102687	32535	68719	PRT102174
8413	44597	ABA100394	20475	56659	ECO102718	32536	68720	PRT102176
8414	44598	ABA100403	20476	56660	ECO102719	32537	68721	PRT102178
8415	44599	ABA100405	20477	56661	ECO102720	32538	68722	PRT102194
8416	44600	ABA100407	20478	56662	ECO102721	32539	68723	PRT102209
8417	44601	ABA100413	20479	56663	ECO102724	32540	68724	PRT102211
8418	44602	ABA100417	20480	56664	ECO102754	32541	68725	PRT102221
8419	44603	ABA100431	20481	56665	ECO102756	32542	68726	PRT102223
8420	44604	ABA100432	20482	56666	ECO102757	32543	68727	PRT102237
8421	44605	ABA100436	20483	56667	ECO102781	32544	68728	PRT102242
8422	44606	ABA100441	20484	56668	ECO102810	32545	68729	PRT102244
8423	44607	ABA100442	20485	56669	ECO102823	32546	68730	PRT102245
8424	44608	ABA100443	20486	56670	ECO102826	32547	68731	PRT102253
8425	44609	ABA100450	20487	56671	ECO102829	32548	68732	PRT102255
8426	44610	ABA100452	20488	56672	ECO102830	32549	68733	PRT102260
8427	44611	ABA100455	20489	56673	ECO102835	32550	68734	PRT102262
8428	44612	ABA100458	20490	56674	ECO102837	32551	68735	PRT102264
8429	44613	ABA100463	20491	56675	ECO102841	32552	68736	PRT102268
8430	44614	ABA100464	20492	56676	ECO102851	32553	68737	PRT102270
8431	44615	ABA100468	20493	56677	ECO102861	32554	68738	PRT102280
8432	44616	ABA100470	20494	56678	ECO102877	32555	68739	PRT102281
8433	44617	ABA100477	20495	56679	ECO102881	32556	68740	PRT102284
8434	44618	ABA100484	20496	56680	ECO102884	32557	68741	PRT102290
8435	44619	ABA100489	20497	56681	ECO102886	32558	68742	PRT102294
8436	44620	ABA100490	20498	56682	ECO102889	32559	68743	PRT102296
8437	44621	ABA100497	20499	56683	ECO102908	32560	68744	PRT102297
8438	44622	ABA100500	20500	56684	ECO102916	32561	68745	PRT102313
8439	44623	ABA100502	20501	56685	ECO102918	32562	68746	PRT102318
8440	44624	ABA100510	20502	56686	ECO102919	32563	68747	PRT102320
8441	44625	ABA100511	20503	56687	ECO102937	32564	68748	PRT102321
8442	44626	ABA100515	20504	56688	ECO102952	32565	68749	PRT102323
8443	44627	ABA100518	20505	56689	ECO102953	32566	68750	PRT102325
8444	44628	ABA100529	20506	56690	ECO102964	32567	68751	PRT102326
8445	44629	ABA100532	20507	56691	ECO102975	32568	68752	PRT102329
8446	44630	ABA100533	20508	56692	ECO102977	32569	68753	PRT102330
8447	44631	ABA100537	20509	56693	ECO102988	32570	68754	PRT102331
8448	44632	ABA100544	20510	56694	ECO102993	32571	68755	PRT102346
8449	44633	ABA100546	20511	56695	ECO102998	32572	68756	PRT102348
8450	44634	ABA100551	20512	56696	ECO103006	32573	68757	PRT102352
8451	44635	ABA100552	20513	56697	ECO103031	32574	68758	PRT102354
8452	44636	ABA100557	20514	56698	ECO103032	32575	68759	PRT102355
8453	44637	ABA100558	20515	56699	ECO103035	32576	68760	PRT102357
8454	44638	ABA100563	20516	56700	ECO103058	32577	68761	PRT102360
8455	44639	ABA100566	20517	56701	ECO103078	32578	68762	PRT102370
8456	44640	ABA100567	20518	56702	ECO103096	32579	68763	PRT102375
8457	44641	ABA100570	20519	56703	ECO103106	32580	68764	PRT102404
8458	44642	ABA100571	20520	56704	ECO103107	32581	68765	PRT102408
8459	44643	ABA100577	20521	56705	ECO103108	32582	68766	PRT102410
8460	44644	ABA100578	20522	56706	ECO103112	32583	68767	PRT102417
8461	44645	ABA100586	20523	56707	ECO103113	32584	68768	PRT102422
8462	44646	ABA100587	20524	56708	ECO103117	32585	68769	PRT102425
8463	44647	ABA100588	20525	56709	ECO103119	32586	68770	PRT102426
8464	44648	ABA100592	20526	56710	ECO103135	32587	68771	PRT102427
8465	44649	ABA100599	20527	56711	ECO103138	32588	68772	PRT102432

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8466	44650	ABA100602	20528	56712	ECO103142	32589	68773	PRT102434
8467	44651	ABA100603	20529	56713	ECO103148	32590	68774	PRT102435
8468	44652	ABA100604	20530	56714	ECO103170	32591	68775	PRT102436
8469	44653	ABA100605	20531	56715	ECO103213	32592	68776	PRT102439
8470	44654	ABA100607	20532	56716	ECO103248	32593	68777	PRT102440
8471	44655	ABA100614	20533	56717	ECO103275	32594	68778	PRT102444
8472	44656	ABA100615	20534	56718	ECO103281	32595	68779	PRT102449
8473	44657	ABA100616	20535	56719	ECO103282	32596	68780	PRT102456
8474	44658	ABA100619	20536	56720	ECO103288	32597	68781	PRT102472
8475	44659	ABA100621	20537	56721	ECO103289	32598	68782	PRT102475
8476	44660	ABA100622	20538	56722	ECO103291	32599	68783	PRT102478
8477	44661	ABA100623	20539	56723	ECO103307	32600	68784	PRT102489
8478	44662	ABA100624	20540	56724	ECO103311	32601	68785	PRT102496
8479	44663	ABA100625	20541	56725	ECO103323	32602	68786	PRT102497
8480	44664	ABA100626	20542	56726	ECO103324	32603	68787	PRT102499
8481	44665	ABA100629	20543	56727	ECO103326	32604	68788	PRT102506
8482	44666	ABA100632	20544	56728	ECO103327	32605	68789	PRT102516
8483	44667	ABA100639	20545	56729	ECO103330	32606	68790	PRT102518
8484	44668	ABA100663	20546	56730	ECO103367	32607	68791	PRT102520
8485	44669	ABA100666	20547	56731	ECO103379	32608	68792	PRT102521
8486	44670	ABA100671	20548	56732	ECO103387	32609	68793	PRT102540
8487	44671	ABA100673	20549	56733	ECO103415	32610	68794	PRT102542
8488	44672	ABA100676	20550	56734	ECO103416	32611	68795	PRT102552
8489	44673	ABA100682	20551	56735	ECO103428	32612	68796	PRT102600
8490	44674	ABA100688	20552	56736	ECO103438	32613	68797	PRT102605
8491	44675	ABA100690	20553	56737	ECO103439	32614	68798	PRT102606
8492	44676	ABA100694	20554	56738	ECO103463	32615	68799	PRT102611
8493	44677	ABA100699	20555	56739	ECO103486	32616	68800	PRT102616
8494	44678	ABA100700	20556	56740	ECO103517	32617	68801	PRT102617
8495	44679	ABA100701	20557	56741	ECO103522	32618	68802	PRT102618
8496	44680	ABA100705	20558	56742	ECO103529	32619	68803	PRT102626
8497	44681	ABA100706	20559	56743	ECO103530	32620	68804	PRT102627
8498	44682	ABA100709	20560	56744	ECO103537	32621	68805	PRT102628
8499	44683	ABA100715	20561	56745	ECO103539	32622	68806	PRT102629
8500	44684	ABA100720	20562	56746	ECO103564	32623	68807	PRT102631
8501	44685	ABA100736	20563	56747	ECO103589	32624	68808	PRT102632
8502	44686	ABA100739	20564	56748	ECO103618	32625	68809	PRT102633
8503	44687	ABA100747	20565	56749	ECO103620	32626	68810	PRT102634
8504	44688	ABA100755	20566	56750	ECO103622	32627	68811	PRT102635
8505	44689	ABA100756	20567	56751	ECO103623	32628	68812	PRT102637
8506	44690	ABA100763	20568	56752	ECO103648	32629	68813	PRT102639
8507	44691	ABA100780	20569	56753	ECO103650	32630	68814	PRT102641
8508	44692	ABA100783	20570	56754	ECO103651	32631	68815	PRT102642
8509	44693	ABA100799	20571	56755	ECO103656	32632	68816	PRT102648
8510	44694	ABA100801	20572	56756	ECO103657	32633	68817	PRT102660
8511	44695	ABA100810	20573	56757	ECO103661	32634	68818	PRT102683
8512	44696	ABA100811	20574	56758	ECO103662	32635	68819	PRT102687
8513	44697	ABA100815	20575	56759	ECO103688	32636	68820	PRT102688
8514	44698	ABA100831	20576	56760	ECO103713	32637	68821	PRT102689
8515	44699	ABA100836	20577	56761	ECO103717	32638	68822	PRT102695
8516	44700	ABA100839	20578	56762	ECO103737	32639	68823	PRT102696
8517	44701	ABA100843	20579	56763	ECO103738	32640	68824	PRT102697
8518	44702	ABA100849	20580	56764	ECO103745	32641	68825	PRT102698
8519	44703	ABA100860	20581	56765	ECO103757	32642	68826	PRT102712
8520	44704	ABA100892	20582	56766	ECO103758	32643	68827	PRT102737

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8521	44705	ABA100896	20583	56767	ECO103770	32644	68828	PRT102743
8522	44706	ABA100898	20584	56768	ECO103776	32645	68829	PRT102752
8523	44707	ABA100900	20585	56769	ECO103787	32646	68830	PRT102753
8524	44708	ABA100902	20586	56770	ECO103818	32647	68831	PRT102780
8525	44709	ABA100914	20587	56771	ECO103822	32648	68832	PRT102791
8526	44710	ABA100916	20588	56772	ECO103838	32649	68833	PRT102800
8527	44711	ABA100920	20589	56773	ECO103852	32650	68834	PRT102802
8528	44712	ABA100922	20590	56774	ECO103868	32651	68835	PRT102814
8529	44713	ABA100924	20591	56775	ECO103874	32652	68836	PRT102819
8530	44714	ABA100927	20592	56776	ECO103889	32653	68837	PRT102821
8531	44715	ABA100930	20593	56777	ECO103890	32654	68838	PRT102824
8532	44716	ABA100933	20594	56778	ECO103891	32655	68839	PRT102825
8533	44717	ABA100939	20595	56779	ECO103909	32656	68840	PRT102826
8534	44718	ABA100945	20596	56780	ECO103913	32657	68841	PRT102830
8535	44719	ABA100967	20597	56781	ECO103916	32658	68842	PRT102833
8536	44720	ABA100977	20598	56782	ECO103936	32659	68843	PRT102835
8537	44721	ABA100981	20599	56783	ECO103939	32660	68844	PRT102837
8538	44722	ABA100982	20600	56784	ECO103945	32661	68845	PRT102839
8539	44723	ABA100983	20601	56785	ECO103946	32662	68846	PRT102841
8540	44724	ABA100986	20602	56786	ECO103947	32663	68847	PRT102844
8541	44725	ABA100989	20603	56787	ECO103952	32664	68848	PRT102849
8542	44726	ABA100992	20604	56788	ECO103963	32665	68849	PRT102853
8543	44727	ABA100996	20605	56789	ECO103977	32666	68850	PRT102865
8544	44728	ABA100998	20606	56790	ECO103983	32667	68851	PRT102866
8545	44729	ABA101013	20607	56791	ECO103984	32668	68852	PRT102872
8546	44730	ABA101016	20608	56792	ECO103989	32669	68853	PRT102873
8547	44731	ABA101027	20609	56793	ECO104023	32670	68854	PRT102877
8548	44732	ABA101029	20610	56794	ECO104060	32671	68855	PRT102879
8549	44733	ABA101031	20611	56795	ECO104064	32672	68856	PRT102887
8550	44734	ABA101034	20612	56796	ECO104067	32673	68857	PRT102895
8551	44735	ABA101037	20613	56797	ECO104083	32674	68858	PRT102899
8552	44736	ABA101046	20614	56798	ECO104088	32675	68859	PRT102900
8553	44737	ABA101047	20615	56799	ECO104094	32676	68860	PRT102904
8554	44738	ABA101054	20616	56800	ECO104099	32677	68861	PRT102918
8555	44739	ABA101057	20617	56801	ECO104120	32678	68862	PRT102921
8556	44740	ABA101072	20618	56802	ECO104124	32679	68863	PRT102922
8557	44741	ABA101082	20619	56803	ECO104127	32680	68864	PRT102941
8558	44742	ABA101100	20620	56804	ECO104150	32681	68865	PRT102944
8559	44743	ABA101112	20621	56805	ECO104179	32682	68866	PRT102958
8560	44744	ABA101148	20622	56806	ECO104222	32683	68867	PRT102977
8561	44745	ABA101157	20623	56807	ECO104238	32684	68868	PRT102996
8562	44746	ABA101163	20624	56808	ECO104239	32685	68869	PRT102997
8563	44747	ABA101187	20625	56809	ECO104261	32686	68870	PRT103043
8564	44748	ABA101188	20626	56810	ECO104267	32687	68871	PRT103046
8565	44749	ABA101192	20627	56811	ECO104275	32688	68872	PRT103047
8566	44750	ABA101195	20628	56812	ECO200236	32689	68873	PRT103050
8567	44751	ABA101198	20629	56813	ECO200334	32690	68874	PRT103054
8568	44752	ABA101202	20630	56814	ECO200539	32691	68875	PRT103064
8569	44753	ABA101203	20631	56815	ECO200602	32692	68876	PRT103066
8570	44754	ABA101204	20632	56816	ECO200746	32693	68877	PRT103067
8571	44755	ABA101220	20633	56817	ECO201260	32694	68878	PRT103078
8572	44756	ABA101252	20634	56818	ECO201271	32695	68879	PRT103085
8573	44757	ABA101262	20635	56819	ECO201319	32696	68880	PRT103088
8574	44758	ABA101266	20636	56820	ECO201335	32697	68881	PRT103094
8575	44759	ABA101271	20637	56821	ECO201353	32698	68882	PRT103095

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8576	44760	ABA101274	20638	56822	ECO201397	32699	68883	PRT103115
8577	44761	ABA101280	20639	56823	ECO201399	32700	68884	PRT103138
8578	44762	ABA101286	20640	56824	ECO201401	32701	68885	PRT103145
8579	44763	ABA101290	20641	56825	ECO201402	32702	68886	PRT103159
8580	44764	ABA101297	20642	56826	ECO201939	32703	68887	PRT103160
8581	44765	ABA101300	20643	56827	ECO202018	32704	68888	PRT103179
8582	44766	ABA101312	20644	56828	ECO202059	32705	68889	PRT103182
8583	44767	ABA101313	20645	56829	ECO202247	32706	68890	PRT103194
8584	44768	ABA101315	20646	56830	ECO203042	32707	68891	PRT103206
8585	44769	ABA101317	20647	56831	ECO203135	32708	68892	PRT103239
8586	44770	ABA101320	20648	56832	ECO203243	32709	68893	PRT103243
8587	44771	ABA101323	20649	56833	ECO203392	32710	68894	PRT103251
8588	44772	ABA101324	20650	56834	ECO203613	32711	68895	PRT103270
8589	44773	ABA101326	20651	56835	ECO203822	32712	68896	PRT103272
8590	44774	ABA101328	20652	56836	ECO203932	32713	68897	PRT103276
8591	44775	ABA101330	20653	56837	ECO204375	32714	68898	PRT103295
8592	44776	ABA101332	20654	56838	ECO204406	32715	68899	PRT103304
8593	44777	ABA101349	20655	56839	ECO204536	32716	68900	PRT103309
8594	44778	ABA101351	20656	56840	ECO204585	32717	68901	PRT103311
8595	44779	ABA101353	20657	56841	ECO204605	32718	68902	PRT103323
8596	44780	ABA101377	20658	56842	ECO204773	32719	68903	PRT103332
8597	44781	ABA101379	20659	56843	ECO205361	32720	68904	PRT103333
8598	44782	ABA101388	20660	56844	ECO205553	32721	68905	PRT103336
8599	44783	ABA101390	20661	56845	ECO205579	32722	68906	PRT103342
8600	44784	ABA101391	20662	56846	ECO205623	32723	68907	PRT103357
8601	44785	ABA101400	20663	56847	EFA100246	32724	68908	PRT103361
8602	44786	ABA101411	20664	56848	EFA100798	32725	68909	PRT103362
8603	44787	ABA101415	20665	56849	EFA100818	32726	68910	PRT103376
8604	44788	ABA101419	20666	56850	EFA101293	32727	68911	PRT103407
8605	44789	ABA101420	20667	56851	EFA101668	32728	68912	PRT103408
8606	44790	ABA101423	20668	56852	EFA101670	32729	68913	PRT103411
8607	44791	ABA101425	20669	56853	EFA102043	32730	68914	PRT103421
8608	44792	ABA101431	20670	56854	EFA102283	32731	68915	PRT103445
8609	44793	ABA101438	20671	56855	EFA102287	32732	68916	PRT103497
8610	44794	ABA101441	20672	56856	EFA102488	32733	68917	PRT103498
8611	44795	ABA101446	20673	56857	EFA103494	32734	68918	PRT103501
8612	44796	ABA101466	20674	56858	EFA103690	32735	68919	PRT103503
8613	44797	ABA101467	20675	56859	EFA103865	32736	68920	PRT103507
8614	44798	ABA101468	20676	56860	EFA103871	32737	68921	PRT103539
8615	44799	ABA101469	20677	56861	EFA104022	32738	68922	PRT103550
8616	44800	ABA101490	20678	56862	EFA104057	32739	68923	PRT103569
8617	44801	ABA101495	20679	56863	EFA104079	32740	68924	PRT103616
8618	44802	ABA101512	20680	56864	EFA104124	32741	68925	PRT103646
8619	44803	ABA101540	20681	56865	EFA200024	32742	68926	PRT103665
8620	44804	ABA101554	20682	56866	EFA200038	32743	68927	PRT103667
8621	44805	ABA101560	20683	56867	EFA200060	32744	68928	PRT103668
8622	44806	ABA101569	20684	56868	EFA200061	32745	68929	PRT103680
8623	44807	ABA101570	20685	56869	EFA200067	32746	68930	PRT103688
8624	44808	ABA101571	20686	56870	EFA200083	32747	68931	PRT103713
8625	44809	ABA101573	20687	56871	EFA200122	32748	68932	PRT103727
8626	44810	ABA101586	20688	56872	EFA200139	32749	68933	PRT103731
8627	44811	ABA101587	20689	56873	EFA200142	32750	68934	PRT103742
8628	44812	ABA101589	20690	56874	EFA200147	32751	68935	PRT103753
8629	44813	ABA101593	20691	56875	EFA200150	32752	68936	PRT103773
8630	44814	ABA101608	20692	56876	EFA200155	32753	68937	PRT103781

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8631	44815	ABA101621	20693	56877	EFA200160	32754	68938	PRT103789
8632	44816	ABA101625	20694	56878	EFA200166	32755	68939	PRT103854
8633	44817	ABA101658	20695	56879	EFA200169	32756	68940	PRT103866
8634	44818	ABA101661	20696	56880	EFA200171	32757	68941	PRT103868
8635	44819	ABA101674	20697	56881	EFA200173	32758	68942	PRT103877
8636	44820	ABA101677	20698	56882	EFA200188	32759	68943	PRT103889
8637	44821	ABA101702	20699	56883	EFA200190	32760	68944	PRT103897
8638	44822	ABA101710	20700	56884	EFA200191	32761	68945	PRT103903
8639	44823	ABA101740	20701	56885	EFA200193	32762	68946	PRT103927
8640	44824	ABA101766	20702	56886	EFA200201	32763	68947	PRT103939
8641	44825	ABA101768	20703	56887	EFA200202	32764	68948	PRT103954
8642	44826	ABA101792	20704	56888	EFA200208	32765	68949	PRT103978
8643	44827	ABA101795	20705	56889	EFA200214	32766	68950	PRT103983
8644	44828	ABA101804	20706	56890	EFA200222	32767	68951	PRT103989
8645	44829	ABA101808	20707	56891	EFA200225	32768	68952	PRT104001
8646	44830	ABA101828	20708	56892	EFA200232	32769	68953	PRT104002
8647	44831	ABA101831	20709	56893	EFA200235	32770	68954	PRT104009
8648	44832	ABA101842	20710	56894	EFA200236	32771	68955	PRT104013
8649	44833	ABA101843	20711	56895	EFA200241	32772	68956	PRT104077
8650	44834	ABA101855	20712	56896	EFA200242	32773	68957	PRT104089
8651	44835	ABA101867	20713	56897	EFA200243	32774	68958	PRT104091
8652	44836	ABA101872	20714	56898	EFA200249	32775	68959	PRT104094
8653	44837	ABA101879	20715	56899	EFA200252	32776	68960	PRT104101
8654	44838	ABA101887	20716	56900	EFA200256	32777	68961	PRT104136
8655	44839	ABA101889	20717	56901	EFA200259	32778	68962	PRT104154
8656	44840	ABA101891	20718	56902	EFA200263	32779	68963	PRT104171
8657	44841	ABA101894	20719	56903	EFA200265	32780	68964	PRT104174
8658	44842	ABA101897	20720	56904	EFA200268	32781	68965	PRT104175
8659	44843	ABA101933	20721	56905	EFA200270	32782	68966	PRT104187
8660	44844	ABA101939	20722	56906	EFA200289	32783	68967	PRT104202
8661	44845	ABA101949	20723	56907	EFA200305	32784	68968	PRT104207
8662	44846	ABA101954	20724	56908	EFA200313	32785	68969	PRT104233
8663	44847	ABA101956	20725	56909	EFA200318	32786	68970	PRT104263
8664	44848	ABA101958	20726	56910	EFA200328	32787	68971	PRT104264
8665	44849	ABA101961	20727	56911	EFA200335	32788	68972	PRT104285
8666	44850	ABA101985	20728	56912	EFA200336	32789	68973	PRT104291
8667	44851	ABA102020	20729	56913	EFA200337	32790	68974	PRT104299
8668	44852	ABA102113	20730	56914	EFA200342	32791	68975	PRT104353
8669	44853	ABA102114	20731	56915	EFA200345	32792	68976	PRT104367
8670	44854	ABA102118	20732	56916	EFA200347	32793	68977	PRT104379
8671	44855	ABA102122	20733	56917	EFA200349	32794	68978	PRT104380
8672	44856	ABA102159	20734	56918	EFA200363	32795	68979	PRT104389
8673	44857	ABA102167	20735	56919	EFA200364	32796	68980	PRT104399
8674	44858	ABA102168	20736	56920	EFA200365	32797	68981	PRT104405
8675	44859	ABA102170	20737	56921	EFA200367	32798	68982	PRT104418
8676	44860	ABA102199	20738	56922	EFA200371	32799	68983	PRT104423
8677	44861	ABA102246	20739	56923	EFA200374	32800	68984	PRT104430
8678	44862	ABA102248	20740	56924	EFA200376	32801	68985	PRT104443
8679	44863	ABA102251	20741	56925	EFA200377	32802	68986	PRT104446
8680	44864	ABA102257	20742	56926	EFA200379	32803	68987	PRT104465
8681	44865	ABA102299	20743	56927	EFA200380	32804	68988	PRT104466
8682	44866	ABA102315	20744	56928	EFA200383	32805	68989	PRT104467
8683	44867	ABA102320	20745	56929	EFA200384	32806	68990	PRT104476
8684	44868	ABA102333	20746	56930	EFA200385	32807	68991	PRT104499
8685	44869	ABA102335	20747	56931	EFA200386	32808	68992	PRT104501

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8686	44870	ABA102336	20748	56932	EFA200390	32809	68993	PRT104507
8687	44871	ABA102339	20749	56933	EFA200393	32810	68994	PRT104518
8688	44872	ABA102343	20750	56934	EFA200395	32811	68995	PRT104530
8689	44873	ABA102357	20751	56935	EFA200396	32812	68996	PRT104531
8690	44874	ABA102358	20752	56936	EFA200401	32813	68997	PRT104542
8691	44875	ABA102360	20753	56937	EFA200404	32814	68998	PRT104544
8692	44876	ABA102375	20754	56938	EFA200419	32815	68999	PRT104545
8693	44877	ABA102417	20755	56939	EFA200422	32816	69000	PRT104576
8694	44878	ABA102422	20756	56940	EFA200424	32817	69001	PRT104586
8695	44879	ABA102434	20757	56941	EFA200426	32818	69002	PRT104596
8696	44880	ABA102453	20758	56942	EFA200427	32819	69003	PRT104598
8697	44881	ABA102462	20759	56943	EFA200429	32820	69004	PRT104604
8698	44882	ABA102495	20760	56944	EFA200432	32821	69005	PRT104614
8699	44883	ABA102496	20761	56945	EFA200434	32822	69006	PRT104636
8700	44884	ABA102498	20762	56946	EFA200438	32823	69007	PRT104641
8701	44885	ABA102500	20763	56947	EFA200443	32824	69008	PRT104644
8702	44886	ABA102501	20764	56948	EFA200448	32825	69009	PRT104654
8703	44887	ABA102503	20765	56949	EFA200462	32826	69010	PRT104687
8704	44888	ABA102523	20766	56950	EFA200464	32827	69011	PRT104688
8705	44889	ABA102526	20767	56951	EFA200470	32828	69012	PRT104690
8706	44890	ABA102541	20768	56952	EFA200471	32829	69013	PRT104691
8707	44891	ABA102546	20769	56953	EFA200474	32830	69014	PRT104693
8708	44892	ABA102548	20770	56954	EFA200476	32831	69015	PRT104700
8709	44893	ABA102567	20771	56955	EFA200477	32832	69016	PRT104707
8710	44894	ABA102578	20772	56956	EFA200479	32833	69017	PRT104710
8711	44895	ABA102625	20773	56957	EFA200480	32834	69018	PRT104726
8712	44896	ABA102630	20774	56958	EFA200493	32835	69019	PRT104730
8713	44897	ABA102635	20775	56959	EFA200509	32836	69020	PRT104732
8714	44898	ABA102651	20776	56960	EFA200510	32837	69021	PRT104736
8715	44899	ABA102697	20777	56961	EFA200527	32838	69022	PRT104738
8716	44900	ABA102759	20778	56962	EFA200549	32839	69023	PRT104740
8717	44901	ABA102772	20779	56963	EFA200551	32840	69024	PRT104743
8718	44902	ABA102812	20780	56964	EFA200566	32841	69025	PRT104768
8719	44903	ABA102827	20781	56965	EFA200573	32842	69026	PRT104772
8720	44904	ABA102842	20782	56966	EFA200587	32843	69027	PRT104789
8721	44905	ABA102849	20783	56967	EFA200592	32844	69028	PRT104794
8722	44906	ABA102855	20784	56968	EFA200593	32845	69029	PRT104799
8723	44907	ABA102859	20785	56969	EFA200604	32846	69030	PRT104808
8724	44908	ABA102872	20786	56970	EFA200608	32847	69031	PRT104823
8725	44909	ABA102876	20787	56971	EFA200628	32848	69032	PRT104826
8726	44910	ABA102882	20788	56972	EFA200629	32849	69033	PRT104827
8727	44911	ABA102900	20789	56973	EFA200635	32850	69034	PRT104831
8728	44912	ABA102906	20790	56974	EFA200641	32851	69035	PRT104834
8729	44913	ABA102927	20791	56975	EFA200646	32852	69036	PRT104849
8730	44914	ABA102929	20792	56976	EFA200648	32853	69037	PRT104862
8731	44915	ABA102930	20793	56977	EFA200654	32854	69038	PRT104870
8732	44916	ABA102959	20794	56978	EFA200656	32855	69039	PRT104876
8733	44917	ABA102979	20795	56979	EFA200657	32856	69040	PRT104879
8734	44918	ABA103034	20796	56980	EFA200658	32857	69041	PRT104883
8735	44919	ABA103036	20797	56981	EFA200659	32858	69042	PRT104884
8736	44920	ABA103059	20798	56982	EFA200665	32859	69043	PRT104887
8737	44921	ABA103073	20799	56983	EFA200672	32860	69044	PRT104892
8738	44922	ABA103075	20800	56984	EFA200676	32861	69045	PRT104897
8739	44923	ABA103108	20801	56985	EFA200678	32862	69046	PRT104898
8740	44924	ABA103119	20802	56986	EFA200679	32863	69047	PRT104902

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8741	44925	ABA103180	20803	56987	EFA200682	32864	69048	PRT104903
8742	44926	ABA103208	20804	56988	EFA200688	32865	69049	PRT104907
8743	44927	ABA103234	20805	56989	EFA200693	32866	69050	PRT104910
8744	44928	ABA103247	20806	56990	EFA200701	32867	69051	PRT104914
8745	44929	ABA103339	20807	56991	EFA200703	32868	69052	PRT104931
8746	44930	ABA103347	20808	56992	EFA200704	32869	69053	PRT104944
8747	44931	ABA103427	20809	56993	EFA200707	32870	69054	PRT104948
8748	44932	ABA103514	20810	56994	EFA200710	32871	69055	PRT104969
8749	44933	ABA103520	20811	56995	EFA200711	32872	69056	PRT104973
8750	44934	ABA103532	20812	56996	EFA200713	32873	69057	PRT105010
8751	44935	ABA103540	20813	56997	EFA200715	32874	69058	PRT105013
8752	44936	ABA103556	20814	56998	EFA200716	32875	69059	PRT105016
8753	44937	ABA103557	20815	56999	EFA200717	32876	69060	PRT105024
8754	44938	ABA103559	20816	57000	EFA200720	32877	69061	PRT105025
8755	44939	ABA103574	20817	57001	EFA200729	32878	69062	PRT105053
8756	44940	ABA103575	20818	57002	EFA200734	32879	69063	PRT105076
8757	44941	ABA103592	20819	57003	EFA200735	32880	69064	PRT105079
8758	44942	ABA103609	20820	57004	EFA200737	32881	69065	PRT105081
8759	44943	ABA103622	20821	57005	EFA200738	32882	69066	PRT105082
8760	44944	ABA103631	20822	57006	EFA200740	32883	69067	PRT105086
8761	44945	ABA103635	20823	57007	EFA200741	32884	69068	PRT105105
8762	44946	ABA103638	20824	57008	EFA200743	32885	69069	PRT105107
8763	44947	ABA103642	20825	57009	EFA200745	32886	69070	PRT105114
8764	44948	ABA103648	20826	57010	EFA200749	32887	69071	PRT105115
8765	44949	ABA103655	20827	57011	EFA200752	32888	69072	PRT105117
8766	44950	ABA103657	20828	57012	EFA200763	32889	69073	PRT105123
8767	44951	ABA103660	20829	57013	EFA200764	32890	69074	PRT105128
8768	44952	ABA103671	20830	57014	EFA200772	32891	69075	PRT105129
8769	44953	ABA103692	20831	57015	EFA200773	32892	69076	PRT105132
8770	44954	ABA103701	20832	57016	EFA200774	32893	69077	PRT105140
8771	44955	ABA103706	20833	57017	EFA200778	32894	69078	PRT105141
8772	44956	ABA103707	20834	57018	EFA200779	32895	69079	PRT105161
8773	44957	ABA103708	20835	57019	EFA200784	32896	69080	PRT105162
8774	44958	ABA103709	20836	57020	EFA200786	32897	69081	PRT105176
8775	44959	ABA103715	20837	57021	EFA200788	32898	69082	PRT105182
8776	44960	ABA103721	20838	57022	EFA200796	32899	69083	PRT105185
8777	44961	ABA103723	20839	57023	EFA200808	32900	69084	PRT105191
8778	44962	ABA103728	20840	57024	EFA200809	32901	69085	PRT105196
8779	44963	ABA103732	20841	57025	EFA200810	32902	69086	PRT105204
8780	44964	ABA103748	20842	57026	EFA200814	32903	69087	PRT105206
8781	44965	ABA103769	20843	57027	EFA200823	32904	69088	PRT105207
8782	44966	ABA103779	20844	57028	EFA200828	32905	69089	PRT105208
8783	44967	ABA103785	20845	57029	EFA200831	32906	69090	PRT105211
8784	44968	ABA103798	20846	57030	EFA200848	32907	69091	PRT105219
8785	44969	ABA103811	20847	57031	EFA200851	32908	69092	PRT105222
8786	44970	ABA103813	20848	57032	EFA200852	32909	69093	PRT105231
8787	44971	ABA103820	20849	57033	EFA200856	32910	69094	PRT105241
8788	44972	ABA103824	20850	57034	EFA200857	32911	69095	PRT105258
8789	44973	ABA103825	20851	57035	EFA200862	32912	69096	PRT105259
8790	44974	ABA103848	20852	57036	EFA200864	32913	69097	PRT105261
8791	44975	ABA103851	20853	57037	EFA200866	32914	69098	PRT105266
8792	44976	ABA103852	20854	57038	EFA200867	32915	69099	PRT105273
8793	44977	ABA103857	20855	57039	EFA200869	32916	69100	PRT105275
8794	44978	ABA103859	20856	57040	EFA200870	32917	69101	PRT105280
8795	44979	ABA103909	20857	57041	EFA200871	32918	69102	PRT105285

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8796	44980	ABA103925	20858	57042	EFA200880	32919	69103	PRT105300
8797	44981	ABA103926	20859	57043	EFA200882	32920	69104	PRT105301
8798	44982	ABA103927	20860	57044	EFA200888	32921	69105	PRT105310
8799	44983	ABA103932	20861	57045	EFA200895	32922	69106	PRT105312
8800	44984	ABA103937	20862	57046	EFA200896	32923	69107	PRT105337
8801	44985	ABA103947	20863	57047	EFA200904	32924	69108	PRT105340
8802	44986	ABA103948	20864	57048	EFA200908	32925	69109	PRT105359
8803	44987	ABA103956	20865	57049	EFA200943	32926	69110	PRT105365
8804	44988	ABA103970	20866	57050	EFA200947	32927	69111	PRT105372
8805	44989	ABA103984	20867	57051	EFA200954	32928	69112	PRT105375
8806	44990	ABA103985	20868	57052	EFA200956	32929	69113	PRT105377
8807	44991	ABA103998	20869	57053	EFA200963	32930	69114	PRT105387
8808	44992	ABA104000	20870	57054	EFA200968	32931	69115	PRT105408
8809	44993	ABA104003	20871	57055	EFA200981	32932	69116	PRT105426
8810	44994	ABA104023	20872	57056	EFA200985	32933	69117	PRT105429
8811	44995	ABA104028	20873	57057	EFA200995	32934	69118	PRT105468
8812	44996	ABA104044	20874	57058	EFA201005	32935	69119	PRT105472
8813	44997	ABA104052	20875	57059	EFA201006	32936	69120	PRT105481
8814	44998	ABA104064	20876	57060	EFA201010	32937	69121	PRT105483
8815	44999	ABA104065	20877	57061	EFA201011	32938	69122	PRT105490
8816	45000	ABA104072	20878	57062	EFA201026	32939	69123	PRT105493
8817	45001	ABA104077	20879	57063	EFA201039	32940	69124	PRT105498
8818	45002	ABA104082	20880	57064	EFA201043	32941	69125	PRT105507
8819	45003	ABA104096	20881	57065	EFA201044	32942	69126	PRT105509
8820	45004	ABA104099	20882	57066	EFA201048	32943	69127	PRT105512
8821	45005	ABA104102	20883	57067	EFA201049	32944	69128	PRT105513
8822	45006	ABA104107	20884	57068	EFA201050	32945	69129	PRT105514
8823	45007	ABA104108	20885	57069	EFA201059	32946	69130	PRT105522
8824	45008	ABA104125	20886	57070	EFA201062	32947	69131	PRT105528
8825	45009	ABA104132	20887	57071	EFA201075	32948	69132	PRT105535
8826	45010	ABA104139	20888	57072	EFA201077	32949	69133	PRT105537
8827	45011	ABA104145	20889	57073	EFA201088	32950	69134	PRT105539
8828	45012	ABA104153	20890	57074	EFA201091	32951	69135	PRT105543
8829	45013	ABA104180	20891	57075	EFA201093	32952	69136	PRT105544
8830	45014	ABA104184	20892	57076	EFA201098	32953	69137	PRT105550
8831	45015	ABA104190	20893	57077	EFA201100	32954	69138	PRT105555
8832	45016	ABA104194	20894	57078	EFA201101	32955	69139	PRT105557
8833	45017	ABA104196	20895	57079	EFA201106	32956	69140	PRT105559
8834	45018	ABA104199	20896	57080	EFA201130	32957	69141	PRT105579
8835	45019	ABA104216	20897	57081	EFA201131	32958	69142	PRT105582
8836	45020	ABA104217	20898	57082	EFA201145	32959	69143	PRT105607
8837	45021	ABA104223	20899	57083	EFA201152	32960	69144	PRT105615
8838	45022	ABA104232	20900	57084	EFA201158	32961	69145	PRT105623
8839	45023	ABA104246	20901	57085	EFA201160	32962	69146	PRT105627
8840	45024	ABA104264	20902	57086	EFA201162	32963	69147	PRT105628
8841	45025	ABA104278	20903	57087	EFA201164	32964	69148	PRT105644
8842	45026	ABA104279	20904	57088	EFA201172	32965	69149	PRT105660
8843	45027	ABA104282	20905	57089	EFA201192	32966	69150	PRT105662
8844	45028	ABA104283	20906	57090	EFA201193	32967	69151	PRT105667
8845	45029	ABA104294	20907	57091	EFA201197	32968	69152	PRT105668
8846	45030	ABA104295	20908	57092	EFA201202	32969	69153	PRT105670
8847	45031	ABA104297	20909	57093	EFA201206	32970	69154	PRT105675
8848	45032	ABA104316	20910	57094	EFA201207	32971	69155	PRT105676
8849	45033	ABA104325	20911	57095	EFA201210	32972	69156	PRT105678
8850	45034	ABA104340	20912	57096	EFA201215	32973	69157	PRT105681

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8851	45035	ABA104342	20913	57097	EFA201217	32974	69158	PRT105689
8852	45036	ABA104344	20914	57098	EFA201219	32975	69159	PRT105698
8853	45037	ABA104354	20915	57099	EFA201221	32976	69160	PRT105702
8854	45038	ABA104364	20916	57100	EFA201230	32977	69161	PRT105711
8855	45039	ABA104382	20917	57101	EFA201235	32978	69162	PRT105715
8856	45040	ABA104393	20918	57102	EFA201241	32979	69163	PRT105730
8857	45041	ABA104395	20919	57103	EFA201248	32980	69164	PRT105732
8858	45042	ABA104411	20920	57104	EFA201252	32981	69165	PRT105741
8859	45043	ABA104415	20921	57105	EFA201253	32982	69166	PRT105756
8860	45044	ABA104416	20922	57106	EFA201256	32983	69167	PRT105764
8861	45045	ABA104423	20923	57107	EFA201265	32984	69168	PRT105765
8862	45046	ABA104433	20924	57108	EFA201268	32985	69169	PRT105767
8863	45047	ABA104443	20925	57109	EFA201271	32986	69170	PRT105772
8864	45048	ABA104455	20926	57110	EFA201273	32987	69171	PRT105801
8865	45049	ABA104460	20927	57111	EFA201280	32988	69172	PRT105806
8866	45050	ABA104487	20928	57112	EFA201281	32989	69173	PRT105809
8867	45051	ABA104490	20929	57113	EFA201284	32990	69174	PRT105811
8868	45052	ABA104491	20930	57114	EFA201285	32991	69175	PRT105815
8869	45053	ABA104498	20931	57115	EFA201290	32992	69176	PRT105818
8870	45054	ABA104508	20932	57116	EFA201297	32993	69177	PRT105822
8871	45055	ABA104510	20933	57117	EFA201299	32994	69178	PRT105824
8872	45056	ABA104514	20934	57118	EFA201300	32995	69179	PRT105836
8873	45057	ABA104543	20935	57119	EFA201303	32996	69180	PRT105848
8874	45058	ABA104561	20936	57120	EFA201306	32997	69181	PRT105871
8875	45059	ABA104564	20937	57121	EFA201307	32998	69182	PRT105875
8876	45060	ABA104568	20938	57122	EFA201309	32999	69183	PRT105877
8877	45061	ABA104573	20939	57123	EFA201310	33000	69184	PRT105881
8878	45062	ABA104575	20940	57124	EFA201313	33001	69185	PRT105882
8879	45063	ABA104578	20941	57125	EFA201316	33002	69186	PRT105891
8880	45064	ABA104591	20942	57126	EFA201321	33003	69187	PRT105900
8881	45065	ABA104593	20943	57127	EFA201330	33004	69188	PRT105904
8882	45066	ABA104594	20944	57128	EFA201338	33005	69189	PRT105906
8883	45067	ABA104598	20945	57129	EFA201340	33006	69190	PRT105923
8884	45068	ABA104605	20946	57130	EFA201342	33007	69191	PRT105949
8885	45069	ABA104607	20947	57131	EFA201345	33008	69192	PRT105954
8886	45070	ABA104613	20948	57132	EFA201348	33009	69193	PRT105958
8887	45071	ABA104621	20949	57133	EFA201363	33010	69194	PRT105964
8888	45072	ABA104623	20950	57134	EFA201366	33011	69195	PRT105970
8889	45073	ABA104632	20951	57135	EFA201378	33012	69196	PRT105976
8890	45074	ABA104644	20952	57136	EFA201382	33013	69197	PRT105988
8891	45075	ABA104674	20953	57137	EFA201386	33014	69198	PRT105992
8892	45076	ABA104682	20954	57138	EFA201396	33015	69199	PRT106003
8893	45077	ABA104697	20955	57139	EFA201398	33016	69200	PRT106011
8894	45078	ABA104701	20956	57140	EFA201399	33017	69201	PRT106021
8895	45079	ABA104704	20957	57141	EFA201423	33018	69202	PRT106022
8896	45080	ABA104706	20958	57142	EFA201431	33019	69203	PRT106034
8897	45081	ABA104707	20959	57143	EFA201439	33020	69204	PRT106055
8898	45082	ABA104714	20960	57144	EFA201443	33021	69205	PRT106061
8899	45083	ABA104746	20961	57145	EFA201445	33022	69206	PRT106062
8900	45084	ABA104757	20962	57146	EFA201458	33023	69207	PRT106079
8901	45085	ABA104763	20963	57147	EFA201462	33024	69208	PRT106088
8902	45086	ABA104769	20964	57148	EFA201464	33025	69209	PRT106096
8903	45087	ABA104774	20965	57149	EFA201465	33026	69210	PRT106097
8904	45088	ABA104775	20966	57150	EFA201466	33027	69211	PRT106098
8905	45089	ABA104779	20967	57151	EFA201471	33028	69212	PRT106101

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8906	45090	ABA104781	20968	57152	EFA201472	33029	69213	PRT106105
8907	45091	ABA104791	20969	57153	EFA201476	33030	69214	PRT106116
8908	45092	ABA104792	20970	57154	EFA201477	33031	69215	PRT106136
8909	45093	ABA104797	20971	57155	EFA201494	33032	69216	PRT106147
8910	45094	ABA104823	20972	57156	EFA201505	33033	69217	PRT106150
8911	45095	ABA104828	20973	57157	EFA201508	33034	69218	PRT106151
8912	45096	ABA104830	20974	57158	EFA201509	33035	69219	PRT106157
8913	45097	ABA104851	20975	57159	EFA201525	33036	69220	PRT106164
8914	45098	ABA104878	20976	57160	EFA201528	33037	69221	PRT106167
8915	45099	ABA104881	20977	57161	EFA201529	33038	69222	PRT106168
8916	45100	ABA104905	20978	57162	EFA201530	33039	69223	PRT106179
8917	45101	ABA104908	20979	57163	EFA201536	33040	69224	PRT106182
8918	45102	ABA104912	20980	57164	EFA201537	33041	69225	PRT106200
8919	45103	ABA104913	20981	57165	EFA201542	33042	69226	PSY100026
8920	45104	ABA104917	20982	57166	EFA201544	33043	69227	PSY100041
8921	45105	ABA104918	20983	57167	EFA201552	33044	69228	PSY100059
8922	45106	ABA104921	20984	57168	EFA201559	33045	69229	PSY100067
8923	45107	ABA104933	20985	57169	EFA201561	33046	69230	PSY100068
8924	45108	ABA104944	20986	57170	EFA201564	33047	69231	PSY100089
8925	45109	ABA104945	20987	57171	EFA201570	33048	69232	PSY100091
8926	45110	ABA104957	20988	57172	EFA201573	33049	69233	PSY100104
8927	45111	ABA104968	20989	57173	EFA201581	33050	69234	PSY100105
8928	45112	ABA104991	20990	57174	EFA201584	33051	69235	PSY100106
8929	45113	ABA104996	20991	57175	EFA201586	33052	69236	PSY100129
8930	45114	ABA105006	20992	57176	EFA201594	33053	69237	PSY100132
8931	45115	ABA105014	20993	57177	EFA201596	33054	69238	PSY100142
8932	45116	ABA105020	20994	57178	EFA201599	33055	69239	PSY100190
8933	45117	ABA105021	20995	57179	EFA201607	33056	69240	PSY100200
8934	45118	ABA105025	20996	57180	EFA201608	33057	69241	PSY100209
8935	45119	ABA105027	20997	57181	EFA201620	33058	69242	PSY100210
8936	45120	ABA105031	20998	57182	EFA201622	33059	69243	PSY100232
8937	45121	ABA105033	20999	57183	EFA201623	33060	69244	PSY100233
8938	45122	ABA105042	21000	57184	EFA201624	33061	69245	PSY100242
8939	45123	ABA105043	21001	57185	EFA201626	33062	69246	PSY100243
8940	45124	ABA105049	21002	57186	EFA201627	33063	69247	PSY100248
8941	45125	ABA105050	21003	57187	EFA201632	33064	69248	PSY100252
8942	45126	ABA105055	21004	57188	EFA201649	33065	69249	PSY100258
8943	45127	ABA105060	21005	57189	EFA201653	33066	69250	PSY100281
8944	45128	ABA105065	21006	57190	EFA201655	33067	69251	PSY100293
8945	45129	ABA105069	21007	57191	EFA201657	33068	69252	PSY100295
8946	45130	ABA105073	21008	57192	EFA201664	33069	69253	PSY100299
8947	45131	ABA105082	21009	57193	EFA201665	33070	69254	PSY100319
8948	45132	ABA105088	21010	57194	EFA201668	33071	69255	PSY100343
8949	45133	ABA105090	21011	57195	EFA201706	33072	69256	PSY100366
8950	45134	ABA105109	21012	57196	EFA201707	33073	69257	PSY100368
8951	45135	ABA105111	21013	57197	EFA201709	33074	69258	PSY100373
8952	45136	ABA105130	21014	57198	EFA201711	33075	69259	PSY100425
8953	45137	ABA105133	21015	57199	EFA201713	33076	69260	PSY100434
8954	45138	ABA105138	21016	57200	EFA201715	33077	69261	PSY100460
8955	45139	ABA105144	21017	57201	EFA201718	33078	69262	PSY100479
8956	45140	ABA105148	21018	57202	EFA201725	33079	69263	PSY100530
8957	45141	ABA105151	21019	57203	EFA201729	33080	69264	PSY100555
8958	45142	ABA105152	21020	57204	EFA201739	33081	69265	PSY100559
8959	45143	ABA105158	21021	57205	EFA201740	33082	69266	PSY100579
8960	45144	ABA105163	21022	57206	EFA201741	33083	69267	PSY100581

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
8961	45145	ABA105164	21023	57207	EFA201750	33084	69268	PSY100590
8962	45146	ABA105166	21024	57208	EFA201783	33085	69269	PSY100602
8963	45147	ABA105171	21025	57209	EFA201785	33086	69270	PSY100665
8964	45148	ABA105177	21026	57210	EFA201797	33087	69271	PSY100686
8965	45149	ABA105182	21027	57211	EFA201799	33088	69272	PSY100713
8966	45150	ABA105185	21028	57212	EFA201802	33089	69273	PSY100717
8967	45151	ABA105190	21029	57213	EFA201804	33090	69274	PSY100720
8968	45152	ABA105195	21030	57214	EFA201808	33091	69275	PSY100727
8969	45153	ABA105202	21031	57215	EFA201809	33092	69276	PSY100737
8970	45154	ABA105208	21032	57216	EFA201812	33093	69277	PSY100759
8971	45155	ABA105243	21033	57217	EFA201824	33094	69278	PSY100792
8972	45156	ABA105245	21034	57218	EFA201830	33095	69279	PSY100814
8973	45157	ABA105254	21035	57219	EFA201835	33096	69280	PSY100822
8974	45158	ABA105255	21036	57220	EFA201838	33097	69281	PSY100824
8975	45159	ABA105256	21037	57221	EFA201842	33098	69282	PSY100831
8976	45160	ABA105269	21038	57222	EFA201843	33099	69283	PSY100833
8977	45161	ABA105278	21039	57223	EFA201844	33100	69284	PSY100837
8978	45162	ABA105298	21040	57224	EFA201845	33101	69285	PSY100848
8979	45163	ABA105304	21041	57225	EFA201849	33102	69286	PSY100871
8980	45164	ABA105312	21042	57226	EFA201855	33103	69287	PSY100875
8981	45165	ABA105321	21043	57227	EFA201862	33104	69288	PSY100879
8982	45166	ABA105327	21044	57228	EFA201864	33105	69289	PSY100919
8983	45167	ABA105335	21045	57229	EFA201865	33106	69290	PSY100923
8984	45168	ABA105360	21046	57230	EFA201872	33107	69291	PSY100942
8985	45169	ABA105367	21047	57231	EFA201885	33108	69292	PSY100945
8986	45170	ABA105381	21048	57232	EFA201887	33109	69293	PSY100953
8987	45171	ABA105409	21049	57233	EFA201890	33110	69294	PSY100956
8988	45172	ABA105410	21050	57234	EFA201894	33111	69295	PSY100971
8989	45173	ABA105440	21051	57235	EFA201896	33112	69296	PSY100980
8990	45174	ABA105442	21052	57236	EFA201899	33113	69297	PSY100988
8991	45175	ABA105445	21053	57237	EFA201902	33114	69298	PSY101006
8992	45176	ABA105447	21054	57238	EFA201919	33115	69299	PSY101011
8993	45177	ABA105449	21055	57239	EFA201924	33116	69300	PSY101023
8994	45178	ABA105452	21056	57240	EFA201925	33117	69301	PSY101025
8995	45179	ABA105471	21057	57241	EFA201930	33118	69302	PSY101029
8996	45180	ABA105476	21058	57242	EFA201931	33119	69303	PSY101032
8997	45181	ABA105477	21059	57243	EFA201933	33120	69304	PSY101033
8998	45182	ABA105495	21060	57244	EFA201935	33121	69305	PSY101034
8999	45183	ABA105498	21061	57245	EFA201939	33122	69306	PSY101038
9000	45184	ABA105502	21062	57246	EFA201956	33123	69307	PSY101040
9001	45185	ABA105508	21063	57247	EFA201957	33124	69308	PSY101043
9002	45186	ABA105513	21064	57248	EFA201971	33125	69309	PSY101050
9003	45187	ABA105518	21065	57249	EFA201972	33126	69310	PSY101054
9004	45188	ABA105527	21066	57250	EFA201992	33127	69311	PSY101062
9005	45189	ABA105528	21067	57251	EFA201995	33128	69312	PSY101063
9006	45190	ABA105529	21068	57252	EFA201996	33129	69313	PSY101064
9007	45191	ABA105535	21069	57253	EFA202002	33130	69314	PSY101065
9008	45192	ABA105536	21070	57254	EFA202010	33131	69315	PSY101076
9009	45193	ABA105537	21071	57255	EFA202014	33132	69316	PSY101078
9010	45194	ABA105548	21072	57256	EFA202024	33133	69317	PSY101086
9011	45195	ABA105551	21073	57257	EFA202025	33134	69318	PSY101101
9012	45196	ABA105566	21074	57258	EFA202030	33135	69319	PSY101120
9013	45197	ABA105571	21075	57259	EFA202033	33136	69320	PSY101139
9014	45198	ABA105572	21076	57260	EFA202035	33137	69321	PSY101154
9015	45199	ABA105579	21077	57261	EFA202052	33138	69322	PSY101164

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9016	45200	ABA105584	21078	57262	EFA202054	33139	69323	PSY101172
9017	45201	ABA105585	21079	57263	EFA202055	33140	69324	PSY101197
9018	45202	ABA105590	21080	57264	EFA202056	33141	69325	PSY101200
9019	45203	ABA105593	21081	57265	EFA202070	33142	69326	PSY101204
9020	45204	ABA105599	21082	57266	EFA202071	33143	69327	PSY101205
9021	45205	ABA105612	21083	57267	EFA202072	33144	69328	PSY101212
9022	45206	ABA105617	21084	57268	EFA202073	33145	69329	PSY101215
9023	45207	ABA105622	21085	57269	EFA202078	33146	69330	PSY101221
9024	45208	ABA105627	21086	57270	EFA202080	33147	69331	PSY101223
9025	45209	ABA105636	21087	57271	EFA202089	33148	69332	PSY101225
9026	45210	ABA105638	21088	57272	EFA202092	33149	69333	PSY101227
9027	45211	ABA105640	21089	57273	EFA202094	33150	69334	PSY101235
9028	45212	ABA105679	21090	57274	EFA202098	33151	69335	PSY101243
9029	45213	ABA105707	21091	57275	EFA202113	33152	69336	PSY101245
9030	45214	ABA105711	21092	57276	EFA202114	33153	69337	PSY101251
9031	45215	ABA105713	21093	57277	EFA202119	33154	69338	PSY101257
9032	45216	ABA105729	21094	57278	EFA202131	33155	69339	PSY101259
9033	45217	ABA105732	21095	57279	EFA202140	33156	69340	PSY101270
9034	45218	ABA105739	21096	57280	EFA202143	33157	69341	PSY101277
9035	45219	ABA105742	21097	57281	EFA202145	33158	69342	PSY101285
9036	45220	ABA105744	21098	57282	EFA202154	33159	69343	PSY101287
9037	45221	ABA105758	21099	57283	EFA202157	33160	69344	PSY101289
9038	45222	ABA105759	21100	57284	EFA202162	33161	69345	PSY101307
9039	45223	ABA105767	21101	57285	EFA202172	33162	69346	PSY101310
9040	45224	ABA105768	21102	57286	EFA202184	33163	69347	PSY101312
9041	45225	ABA105771	21103	57287	EFA202186	33164	69348	PSY101314
9042	45226	ABA105776	21104	57288	EFA202191	33165	69349	PSY101322
9043	45227	ABA105779	21105	57289	EFA202196	33166	69350	PSY101323
9044	45228	ABA105798	21106	57290	EFA202198	33167	69351	PSY101331
9045	45229	ABA105799	21107	57291	EFA202204	33168	69352	PSY101332
9046	45230	ABA105800	21108	57292	EFA202205	33169	69353	PSY101343
9047	45231	ABA105805	21109	57293	EFA202207	33170	69354	PSY101347
9048	45232	ABA105807	21110	57294	EFA202219	33171	69355	PSY101350
9049	45233	ABA105815	21111	57295	EFA202220	33172	69356	PSY101352
9050	45234	ABA105822	21112	57296	EFA202242	33173	69357	PSY101358
9051	45235	ABA105827	21113	57297	EFA202243	33174	69358	PSY101361
9052	45236	ABA105833	21114	57298	EFA202248	33175	69359	PSY101363
9053	45237	ABA105845	21115	57299	EFA202255	33176	69360	PSY101364
9054	45238	ABA105849	21116	57300	EFA202259	33177	69361	PSY101423
9055	45239	ABA105856	21117	57301	EFA202266	33178	69362	PSY101467
9056	45240	ABA105859	21118	57302	EFA202268	33179	69363	PSY101474
9057	45241	ABA105864	21119	57303	EFA202270	33180	69364	PSY101541
9058	45242	ABA105892	21120	57304	EFA202273	33181	69365	PSY101542
9059	45243	ABA105899	21121	57305	EFA202281	33182	69366	PSY101574
9060	45244	ABA105904	21122	57306	EFA202282	33183	69367	PSY101584
9061	45245	ABA105924	21123	57307	EFA202292	33184	69368	PSY101603
9062	45246	ABA105929	21124	57308	EFA202294	33185	69369	PSY101607
9063	45247	ABA105938	21125	57309	EFA202329	33186	69370	PSY101610
9064	45248	ABA105939	21126	57310	EFA202330	33187	69371	PSY101642
9065	45249	ABA105948	21127	57311	EFA202331	33188	69372	PSY101651
9066	45250	ABA105949	21128	57312	EFA202336	33189	69373	PSY101669
9067	45251	ABA105983	21129	57313	EFA202339	33190	69374	PSY101670
9068	45252	ABA105993	21130	57314	EFA202342	33191	69375	PSY101673
9069	45253	ABA105994	21131	57315	EFA202344	33192	69376	PSY101677
9070	45254	ABA106017	21132	57316	EFA202347	33193	69377	PSY101683

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9071	45255	ABA106023	21133	57317	EFA202350	33194	69378	PSY101689
9072	45256	ABA106026	21134	57318	EFA202355	33195	69379	PSY101696
9073	45257	ABA106035	21135	57319	EFA202356	33196	69380	PSY101697
9074	45258	ABA106040	21136	57320	EFA202357	33197	69381	PSY101698
9075	45259	ABA106047	21137	57321	EFA202358	33198	69382	PSY101701
9076	45260	ABA106057	21138	57322	EFA202359	33199	69383	PSY101711
9077	45261	ABA106058	21139	57323	EFA202361	33200	69384	PSY101722
9078	45262	ABA106059	21140	57324	EFA202362	33201	69385	PSY101745
9079	45263	ABA106072	21141	57325	EFA202365	33202	69386	PSY101748
9080	45264	ABA106084	21142	57326	EFA202368	33203	69387	PSY101764
9081	45265	ABA106085	21143	57327	EFA202370	33204	69388	PSY101765
9082	45266	ABA106107	21144	57328	EFA202372	33205	69389	PSY101769
9083	45267	ABA106110	21145	57329	EFA202379	33206	69390	PSY101770
9084	45268	ABA106113	21146	57330	EFA202385	33207	69391	PSY101773
9085	45269	ABA106133	21147	57331	EFA202387	33208	69392	PSY101776
9086	45270	ABA106138	21148	57332	EFA202388	33209	69393	PSY101789
9087	45271	ABA106144	21149	57333	EFA202399	33210	69394	PSY101795
9088	45272	ABA106150	21150	57334	EFA202404	33211	69395	PSY101807
9089	45273	ABA106151	21151	57335	EFA202405	33212	69396	PSY101812
9090	45274	ABA106158	21152	57336	EFA202409	33213	69397	PSY101826
9091	45275	BAN100006	21153	57337	EFA202411	33214	69398	PSY101839
9092	45276	BAN100015	21154	57338	EFA202413	33215	69399	PSY101861
9093	45277	BAN100016	21155	57339	EFA202418	33216	69400	PSY101885
9094	45278	BAN100022	21156	57340	EFA202419	33217	69401	PSY101887
9095	45279	BAN100029	21157	57341	EFA202421	33218	69402	PSY101911
9096	45280	BAN100051	21158	57342	EFA202423	33219	69403	PSY101953
9097	45281	BAN100062	21159	57343	EFA202424	33220	69404	PSY101958
9098	45282	BAN100066	21160	57344	EFA202428	33221	69405	PSY101963
9099	45283	BAN100067	21161	57345	EFA202431	33222	69406	PSY101969
9100	45284	BAN100068	21162	57346	EFA202432	33223	69407	PSY101979
9101	45285	BAN100109	21163	57347	EFA202434	33224	69408	PSY101984
9102	45286	BAN100117	21164	57348	EFA202435	33225	69409	PSY102003
9103	45287	BAN100124	21165	57349	EFA202445	33226	69410	PSY102004
9104	45288	BAN100129	21166	57350	EFA202447	33227	69411	PSY102041
9105	45289	BAN100143	21167	57351	EFA202448	33228	69412	PSY102056
9106	45290	BAN100158	21168	57352	EFA202449	33229	69413	PSY102073
9107	45291	BAN100162	21169	57353	EFA202450	33230	69414	PSY102082
9108	45292	BAN100163	21170	57354	EFA202451	33231	69415	PSY102083
9109	45293	BAN100164	21171	57355	EFA202465	33232	69416	PSY102097
9110	45294	BAN100167	21172	57356	EFA202511	33233	69417	PSY102116
9111	45295	BAN100173	21173	57357	EFA202579	33234	69418	PSY102126
9112	45296	BAN100187	21174	57358	EFA202629	33235	69419	PSY102130
9113	45297	BAN100190	21175	57359	EFA202663	33236	69420	PSY102144
9114	45298	BAN100191	21176	57360	EFA202691	33237	69421	PSY102145
9115	45299	BAN100193	21177	57361	EFA202706	33238	69422	PSY102146
9116	45300	BAN100195	21178	57362	EFA202758	33239	69423	PSY102148
9117	45301	BAN100196	21179	57363	EFA202786	33240	69424	PSY102150
9118	45302	BAN100201	21180	57364	EFA202884	33241	69425	PSY102151
9119	45303	BAN100208	21181	57365	EFA202897	33242	69426	PSY102165
9120	45304	BAN100216	21182	57366	EFA202940	33243	69427	PSY102166
9121	45305	BAN100218	21183	57367	EFA203027	33244	69428	PSY102170
9122	45306	BAN100221	21184	57368	EFA203038	33245	69429	PSY102175
9123	45307	BAN100224	21185	57369	EFA203072	33246	69430	PSY102181
9124	45308	BAN100228	21186	57370	EFA203085	33247	69431	PSY102192
9125	45309	BAN100256	21187	57371	EFA203098	33248	69432	PSY102195

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9126	45310	BAN100258	21188	57372	EFA203112	33249	69433	PSY102199
9127	45311	BAN100264	21189	57373	EFA203138	33250	69434	PSY102201
9128	45312	BAN100271	21190	57374	EFA203172	33251	69435	PSY102203
9129	45313	BAN100279	21191	57375	EFA203174	33252	69436	PSY102222
9130	45314	BAN100298	21192	57376	EFA203222	33253	69437	PSY102225
9131	45315	BAN100304	21193	57377	EFA203228	33254	69438	PSY102229
9132	45316	BAN100305	21194	57378	EFA203247	33255	69439	PSY102269
9133	45317	BAN100313	21195	57379	EFA203403	33256	69440	PSY102309
9134	45318	BAN100334	21196	57380	EFA203405	33257	69441	PSY102320
9135	45319	BAN100337	21197	57381	EFA203406	33258	69442	PSY102326
9136	45320	BAN100345	21198	57382	EFA203407	33259	69443	PSY102332
9137	45321	BAN100346	21199	57383	EFA203430	33260	69444	PSY102334
9138	45322	BAN100349	21200	57384	EFA203524	33261	69445	PSY102335
9139	45323	BAN100354	21201	57385	EFA203574	33262	69446	PSY102356
9140	45324	BAN100358	21202	57386	EFA203644	33263	69447	PSY102362
9141	45325	BAN100367	21203	57387	EFA203652	33264	69448	PSY102376
9142	45326	BAN100374	21204	57388	EFA203967	33265	69449	PSY102379
9143	45327	BAN100380	21205	57389	EFA204162	33266	69450	PSY102382
9144	45328	BAN100388	21206	57390	EFA204183	33267	69451	PSY102383
9145	45329	BAN100392	21207	57391	EFA204184	33268	69452	PSY102406
9146	45330	BAN100401	21208	57392	EFA204185	33269	69453	PSY102419
9147	45331	BAN100407	21209	57393	EFA204186	33270	69454	PSY102421
9148	45332	BAN100415	21210	57394	EFA204368	33271	69455	PSY102423
9149	45333	BAN100418	21211	57395	EFA204507	33272	69456	PSY102424
9150	45334	BAN100420	21212	57396	EFA204644	33273	69457	PSY102425
9151	45335	BAN100422	21213	57397	EFA204780	33274	69458	PSY102430
9152	45336	BAN100427	21214	57398	EFA204825	33275	69459	PSY102431
9153	45337	BAN100431	21215	57399	EFA204896	33276	69460	PSY102433
9154	45338	BAN100434	21216	57400	EFA205116	33277	69461	PSY102435
9155	45339	BAN100435	21217	57401	EFA205322	33278	69462	PSY102464
9156	45340	BAN100439	21218	57402	EFM100053	33279	69463	PSY102486
9157	45341	BAN100446	21219	57403	EFM100074	33280	69464	PSY102492
9158	45342	BAN100457	21220	57404	EFM100083	33281	69465	PSY102496
9159	45343	BAN100469	21221	57405	EFM100086	33282	69466	PSY102503
9160	45344	BAN100470	21222	57406	EFM100121	33283	69467	PSY102504
9161	45345	BAN100484	21223	57407	EFM100140	33284	69468	PSY102515
9162	45346	BAN100493	21224	57408	EFM100157	33285	69469	PSY102524
9163	45347	BAN100509	21225	57409	EFM100160	33286	69470	PSY102525
9164	45348	BAN100510	21226	57410	EFM100161	33287	69471	PSY102530
9165	45349	BAN100511	21227	57411	EFM100184	33288	69472	PSY102532
9166	45350	BAN100517	21228	57412	EFM100206	33289	69473	PSY102550
9167	45351	BAN100527	21229	57413	EFM100213	33290	69474	PSY102551
9168	45352	BAN100529	21230	57414	EFM100219	33291	69475	PSY102554
9169	45353	BAN100549	21231	57415	EFM100240	33292	69476	PSY102557
9170	45354	BAN100561	21232	57416	EFM100280	33293	69477	PSY102563
9171	45355	BAN100569	21233	57417	EFM100281	33294	69478	PSY102568
9172	45356	BAN100572	21234	57418	EFM100294	33295	69479	PSY102576
9173	45357	BAN100578	21235	57419	EFM100355	33296	69480	PSY102581
9174	45358	BAN100580	21236	57420	EFM100401	33297	69481	PSY102584
9175	45359	BAN100582	21237	57421	EFM100436	33298	69482	PSY102591
9176	45360	BAN100591	21238	57422	EFM100453	33299	69483	PSY102598
9177	45361	BAN100594	21239	57423	EFM100455	33300	69484	PSY102599
9178	45362	BAN100600	21240	57424	EFM100456	33301	69485	PSY102601
9179	45363	BAN100610	21241	57425	EFM100463	33302	69486	PSY102602
9180	45364	BAN100622	21242	57426	EFM100464	33303	69487	PSY102604

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9181	45365	BAN100629	21243	57427	EFM100480	33304	69488	PSY102624
9182	45366	BAN100632	21244	57428	EFM100481	33305	69489	PSY102628
9183	45367	BAN100637	21245	57429	EFM100482	33306	69490	PSY102681
9184	45368	BAN100648	21246	57430	EFM100483	33307	69491	PSY102683
9185	45369	BAN100661	21247	57431	EFM100494	33308	69492	PSY102684
9186	45370	BAN100665	21248	57432	EFM100507	33309	69493	PSY102686
9187	45371	BAN100668	21249	57433	EFM100508	33310	69494	PSY102688
9188	45372	BAN100669	21250	57434	EFM100534	33311	69495	PSY102689
9189	45373	BAN100670	21251	57435	EFM100539	33312	69496	PSY102698
9190	45374	BAN100680	21252	57436	EFM100567	33313	69497	PSY102705
9191	45375	BAN100690	21253	57437	EFM100577	33314	69498	PSY102707
9192	45376	BAN100700	21254	57438	EFM100580	33315	69499	PSY102709
9193	45377	BAN100702	21255	57439	EFM100592	33316	69500	PSY102725
9194	45378	BAN100724	21256	57440	EFM100646	33317	69501	PSY102739
9195	45379	BAN100749	21257	57441	EFM100662	33318	69502	PSY102740
9196	45380	BAN100750	21258	57442	EFM100680	33319	69503	PSY102744
9197	45381	BAN100778	21259	57443	EFM100682	33320	69504	PSY102749
9198	45382	BAN100780	21260	57444	EFM100690	33321	69505	PSY102752
9199	45383	BAN100788	21261	57445	EFM100695	33322	69506	PSY102763
9200	45384	BAN100793	21262	57446	EFM100700	33323	69507	PSY102765
9201	45385	BAN100797	21263	57447	EFM100705	33324	69508	PSY102770
9202	45386	BAN100800	21264	57448	EFM100706	33325	69509	PSY102772
9203	45387	BAN100808	21265	57449	EFM100720	33326	69510	PSY102773
9204	45388	BAN100809	21266	57450	EFM100721	33327	69511	PSY102777
9205	45389	BAN100822	21267	57451	EFM100732	33328	69512	PSY102781
9206	45390	BAN100824	21268	57452	EFM100733	33329	69513	PSY102789
9207	45391	BAN100826	21269	57453	EFM100738	33330	69514	PSY102791
9208	45392	BAN100828	21270	57454	EFM100758	33331	69515	PSY102797
9209	45393	BAN100831	21271	57455	EFM100759	33332	69516	PSY102798
9210	45394	BAN100835	21272	57456	EFM100783	33333	69517	PSY102809
9211	45395	BAN100839	21273	57457	EFM100784	33334	69518	PSY102814
9212	45396	BAN100845	21274	57458	EFM100811	33335	69519	PSY102817
9213	45397	BAN100847	21275	57459	EFM100817	33336	69520	PSY102848
9214	45398	BAN100855	21276	57460	EFM100877	33337	69521	PSY102851
9215	45399	BAN100878	21277	57461	EFM100881	33338	69522	PSY102852
9216	45400	BAN100879	21278	57462	EFM100885	33339	69523	PSY102854
9217	45401	BAN100882	21279	57463	EFM100886	33340	69524	PSY102861
9218	45402	BAN100894	21280	57464	EFM100902	33341	69525	PSY102864
9219	45403	BAN100899	21281	57465	EFM100909	33342	69526	PSY102870
9220	45404	BAN100917	21282	57466	EFM100911	33343	69527	PSY102871
9221	45405	BAN100924	21283	57467	EFM100918	33344	69528	PSY102874
9222	45406	BAN100929	21284	57468	EFM100935	33345	69529	PSY102877
9223	45407	BAN100937	21285	57469	EFM100945	33346	69530	PSY102884
9224	45408	BAN100939	21286	57470	EFM101005	33347	69531	PSY102886
9225	45409	BAN100950	21287	57471	EFM101032	33348	69532	PSY102892
9226	45410	BAN100960	21288	57472	EFM101064	33349	69533	PSY102905
9227	45411	BAN100961	21289	57473	EFM101075	33350	69534	PSY102909
9228	45412	BAN100965	21290	57474	EFM101077	33351	69535	PSY102912
9229	45413	BAN100967	21291	57475	EFM101102	33352	69536	PSY102913
9230	45414	BAN100973	21292	57476	EFM101106	33353	69537	PSY102915
9231	45415	BAN100977	21293	57477	EFM101108	33354	69538	PSY102918
9232	45416	BAN100978	21294	57478	EFM101112	33355	69539	PSY102921
9233	45417	BAN100994	21295	57479	EFM101137	33356	69540	PSY102925
9234	45418	BAN100998	21296	57480	EFM101138	33357	69541	PSY102933
9235	45419	BAN101011	21297	57481	EFM101163	33358	69542	PSY102936

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9236	45420	BAN101020	21298	57482	EFM101167	33359	69543	PSY102944
9237	45421	BAN101034	21299	57483	EFM101204	33360	69544	PSY102953
9238	45422	BAN101040	21300	57484	EFM101238	33361	69545	PSY102964
9239	45423	BAN101047	21301	57485	EFM101242	33362	69546	PSY102978
9240	45424	BAN101050	21302	57486	EFM101244	33363	69547	PSY102991
9241	45425	BAN101055	21303	57487	EFM101245	33364	69548	PSY102999
9242	45426	BAN101059	21304	57488	EFM101256	33365	69549	PSY103013
9243	45427	BAN101064	21305	57489	EFM101257	33366	69550	PSY103014
9244	45428	BAN101066	21306	57490	EFM101276	33367	69551	PSY103024
9245	45429	BAN101075	21307	57491	EFM101277	33368	69552	PSY103027
9246	45430	BAN101080	21308	57492	EFM101283	33369	69553	PSY103030
9247	45431	BAN101095	21309	57493	EFM101382	33370	69554	PSY103036
9248	45432	BAN101097	21310	57494	EFM101390	33371	69555	PSY103037
9249	45433	BAN101120	21311	57495	EFM101435	33372	69556	PSY103044
9250	45434	BAN101130	21312	57496	EFM101476	33373	69557	PSY103047
9251	45435	BAN101135	21313	57497	EFM101478	33374	69558	PSY103050
9252	45436	BAN101161	21314	57498	EFM101508	33375	69559	PSY103058
9253	45437	BAN101178	21315	57499	EFM101518	33376	69560	PSY103060
9254	45438	BAN101189	21316	57500	EFM101550	33377	69561	PSY103061
9255	45439	BAN101197	21317	57501	EFM101557	33378	69562	PSY103076
9256	45440	BAN101204	21318	57502	EFM101564	33379	69563	PSY103084
9257	45441	BAN101218	21319	57503	EFM101566	33380	69564	PSY103089
9258	45442	BAN101221	21320	57504	EFM101645	33381	69565	PSY103100
9259	45443	BAN101226	21321	57505	EFM101648	33382	69566	PSY103102
9260	45444	BAN101235	21322	57506	EFM101677	33383	69567	PSY103108
9261	45445	BAN101236	21323	57507	EFM101678	33384	69568	PSY103109
9262	45446	BAN101242	21324	57508	EFM101685	33385	69569	PSY103112
9263	45447	BAN101272	21325	57509	EFM101712	33386	69570	PSY103113
9264	45448	BAN101282	21326	57510	EFM101770	33387	69571	PSY103114
9265	45449	BAN101291	21327	57511	EFM101836	33388	69572	PSY103115
9266	45450	BAN101294	21328	57512	EFM101838	33389	69573	PSY103120
9267	45451	BAN101298	21329	57513	EFM101912	33390	69574	PSY103122
9268	45452	BAN101318	21330	57514	EFM101932	33391	69575	PSY103125
9269	45453	BAN101319	21331	57515	EFM101937	33392	69576	PSY103131
9270	45454	BAN101337	21332	57516	EFM101954	33393	69577	PSY103136
9271	45455	BAN101360	21333	57517	EFM101955	33394	69578	PSY103157
9272	45456	BAN101366	21334	57518	EFM101977	33395	69579	PSY103164
9273	45457	BAN101367	21335	57519	EFM102001	33396	69580	PSY103165
9274	45458	BAN101372	21336	57520	EFM102024	33397	69581	PSY103180
9275	45459	BAN101384	21337	57521	EFM102036	33398	69582	PSY103185
9276	45460	BAN101408	21338	57522	EFM102056	33399	69583	PSY103189
9277	45461	BAN101414	21339	57523	EFM102057	33400	69584	PSY103191
9278	45462	BAN101423	21340	57524	EFM102089	33401	69585	PSY103194
9279	45463	BAN101424	21341	57525	EFM102093	33402	69586	PSY103202
9280	45464	BAN101433	21342	57526	EFM102193	33403	69587	PSY103212
9281	45465	BAN101436	21343	57527	EFM102196	33404	69588	PSY103215
9282	45466	BAN101440	21344	57528	EFM102207	33405	69589	PSY103222
9283	45467	BAN101449	21345	57529	EFM102228	33406	69590	PSY103224
9284	45468	BAN101451	21346	57530	EFM102258	33407	69591	PSY103237
9285	45469	BAN101459	21347	57531	EFM102283	33408	69592	PSY103255
9286	45470	BAN101466	21348	57532	EFM102296	33409	69593	PSY103261
9287	45471	BAN101468	21349	57533	EFM102312	33410	69594	PSY103265
9288	45472	BAN101496	21350	57534	EFM102321	33411	69595	PSY103268
9289	45473	BAN101499	21351	57535	EFM102346	33412	69596	PSY103272
9290	45474	BAN101506	21352	57536	EFM102382	33413	69597	PSY103291

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9291	45475	BAN101508	21353	57537	EFM102383	33414	69598	PSY103300
9292	45476	BAN101523	21354	57538	EFM102391	33415	69599	PSY103302
9293	45477	BAN101529	21355	57539	EFM102447	33416	69600	PSY103310
9294	45478	BAN101551	21356	57540	EFM102460	33417	69601	PSY103312
9295	45479	BAN101552	21357	57541	EFM102508	33418	69602	PSY103313
9296	45480	BAN101555	21358	57542	EFM102565	33419	69603	PSY103320
9297	45481	BAN101564	21359	57543	EFM102626	33420	69604	PSY103327
9298	45482	BAN101568	21360	57544	EFM102997	33421	69605	PSY103333
9299	45483	BAN101569	21361	57545	EFM103017	33422	69606	PSY103335
9300	45484	BAN101572	21362	57546	EFM103156	33423	69607	PSY103338
9301	45485	BAN101583	21363	57547	EFM103205	33424	69608	PSY103339
9302	45486	BAN101585	21364	57548	EFM103220	33425	69609	PSY103340
9303	45487	BAN101606	21365	57549	EFM103325	33426	69610	PSY103348
9304	45488	BAN101609	21366	57550	EFM103335	33427	69611	PSY103362
9305	45489	BAN101612	21367	57551	EFM200001	33428	69612	PSY103379
9306	45490	BAN101637	21368	57552	EFM200008	33429	69613	PSY103381
9307	45491	BAN101643	21369	57553	EFM200012	33430	69614	PSY103383
9308	45492	BAN101644	21370	57554	EFM200014	33431	69615	PSY103388
9309	45493	BAN101650	21371	57555	EFM200018	33432	69616	PSY103389
9310	45494	BAN101656	21372	57556	EFM200019	33433	69617	PSY103391
9311	45495	BAN101659	21373	57557	EFM200023	33434	69618	PSY103395
9312	45496	BAN101660	21374	57558	EFM200028	33435	69619	PSY103396
9313	45497	BAN101664	21375	57559	EFM200029	33436	69620	PSY103397
9314	45498	BAN101684	21376	57560	EFM200039	33437	69621	PSY103398
9315	45499	BAN101686	21377	57561	EFM200042	33438	69622	PSY103399
9316	45500	BAN101687	21378	57562	EFM200070	33439	69623	PSY103400
9317	45501	BAN101698	21379	57563	EFM200086	33440	69624	PSY103401
9318	45502	BAN101703	21380	57564	EFM200093	33441	69625	PSY103410
9319	45503	BAN101705	21381	57565	EFM200105	33442	69626	PSY103413
9320	45504	BAN101706	21382	57566	EFM200106	33443	69627	PSY103420
9321	45505	BAN101717	21383	57567	EFM200108	33444	69628	PSY103429
9322	45506	BAN101728	21384	57568	EFM200109	33445	69629	PSY103430
9323	45507	BAN101731	21385	57569	EFM200112	33446	69630	PSY103431
9324	45508	BAN101755	21386	57570	EFM200113	33447	69631	PSY103433
9325	45509	BAN101759	21387	57571	EFM200126	33448	69632	PSY103434
9326	45510	BAN101766	21388	57572	EFM200127	33449	69633	PSY103435
9327	45511	BAN101769	21389	57573	EFM200128	33450	69634	PSY103436
9328	45512	BAN101772	21390	57574	EFM200129	33451	69635	PSY103442
9329	45513	BAN101794	21391	57575	EFM200131	33452	69636	PSY103445
9330	45514	BAN101801	21392	57576	EFM200136	33453	69637	PSY103456
9331	45515	BAN101805	21393	57577	EFM200138	33454	69638	PSY103460
9332	45516	BAN101807	21394	57578	EFM200144	33455	69639	PSY103463
9333	45517	BAN101808	21395	57579	EFM200146	33456	69640	PSY103480
9334	45518	BAN101821	21396	57580	EFM200170	33457	69641	PSY103492
9335	45519	BAN101826	21397	57581	EFM200181	33458	69642	PSY103499
9336	45520	BAN101836	21398	57582	EFM200186	33459	69643	PSY103506
9337	45521	BAN101846	21399	57583	EFM200190	33460	69644	PSY103526
9338	45522	BAN101870	21400	57584	EFM200192	33461	69645	PSY103530
9339	45523	BAN101871	21401	57585	EFM200194	33462	69646	PSY103533
9340	45524	BAN101873	21402	57586	EFM200195	33463	69647	PSY103536
9341	45525	BAN101878	21403	57587	EFM200200	33464	69648	PSY103553
9342	45526	BAN101891	21404	57588	EFM200204	33465	69649	PSY103554
9343	45527	BAN101892	21405	57589	EFM200208	33466	69650	PSY103555
9344	45528	BAN101900	21406	57590	EFM200209	33467	69651	PSY103557
9345	45529	BAN101903	21407	57591	EFM200212	33468	69652	PSY103562

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9346	45530	BAN101907	21408	57592	EFM200220	33469	69653	PSY103563
9347	45531	BAN101917	21409	57593	EFM200229	33470	69654	PSY103569
9348	45532	BAN101919	21410	57594	EFM200235	33471	69655	PSY103571
9349	45533	BAN101920	21411	57595	EFM200238	33472	69656	PSY103584
9350	45534	BAN101922	21412	57596	EFM200246	33473	69657	PSY103587
9351	45535	BAN101932	21413	57597	EFM200248	33474	69658	PSY103596
9352	45536	BAN101961	21414	57598	EFM200250	33475	69659	PSY103601
9353	45537	BAN101977	21415	57599	EFM200252	33476	69660	PSY103605
9354	45538	BAN101985	21416	57600	EFM200259	33477	69661	PSY103606
9355	45539	BAN102006	21417	57601	EFM200260	33478	69662	PSY103607
9356	45540	BAN102017	21418	57602	EFM200261	33479	69663	PSY103622
9357	45541	BAN102018	21419	57603	EFM200265	33480	69664	PSY103646
9358	45542	BAN102021	21420	57604	EFM200286	33481	69665	PSY103648
9359	45543	BAN102026	21421	57605	EFM200290	33482	69666	PSY103650
9360	45544	BAN102027	21422	57606	EFM200291	33483	69667	PSY103670
9361	45545	BAN102029	21423	57607	EFM200294	33484	69668	PSY103682
9362	45546	BAN102049	21424	57608	EFM200299	33485	69669	PSY103687
9363	45547	BAN102051	21425	57609	EFM200303	33486	69670	PSY103697
9364	45548	BAN102068	21426	57610	EFM200310	33487	69671	PSY103709
9365	45549	BAN102071	21427	57611	EFM200318	33488	69672	PSY103720
9366	45550	BAN102074	21428	57612	EFM200319	33489	69673	PSY103723
9367	45551	BAN102075	21429	57613	EFM200325	33490	69674	PSY103724
9368	45552	BAN102078	21430	57614	EFM200354	33491	69675	PSY103728
9369	45553	BAN102079	21431	57615	EFM200367	33492	69676	PSY103729
9370	45554	BAN102092	21432	57616	EFM200375	33493	69677	PSY103737
9371	45555	BAN102104	21433	57617	EFM200382	33494	69678	PSY103766
9372	45556	BAN102127	21434	57618	EFM200383	33495	69679	PSY103768
9373	45557	BAN102128	21435	57619	EFM200390	33496	69680	PSY103769
9374	45558	BAN102132	21436	57620	EFM200394	33497	69681	PSY103770
9375	45559	BAN102154	21437	57621	EFM200399	33498	69682	PSY103780
9376	45560	BAN102171	21438	57622	EFM200400	33499	69683	PSY103783
9377	45561	BAN102184	21439	57623	EFM200402	33500	69684	PSY103786
9378	45562	BAN102196	21440	57624	EFM200410	33501	69685	PSY103787
9379	45563	BAN102202	21441	57625	EFM200415	33502	69686	PSY103789
9380	45564	BAN102211	21442	57626	EFM200431	33503	69687	PSY103791
9381	45565	BAN102220	21443	57627	EFM200438	33504	69688	PSY103793
9382	45566	BAN102229	21444	57628	EFM200442	33505	69689	PSY103796
9383	45567	BAN102231	21445	57629	EFM200451	33506	69690	PSY103797
9384	45568	BAN102239	21446	57630	EFM200454	33507	69691	PSY103798
9385	45569	BAN102250	21447	57631	EFM200458	33508	69692	PSY103799
9386	45570	BAN102267	21448	57632	EFM200460	33509	69693	PSY103800
9387	45571	BAN102272	21449	57633	EFM200465	33510	69694	PSY103804
9388	45572	BAN102298	21450	57634	EFM200467	33511	69695	PSY103806
9389	45573	BAN102304	21451	57635	EFM200472	33512	69696	PSY103809
9390	45574	BAN102312	21452	57636	EFM200476	33513	69697	PSY103810
9391	45575	BAN102313	21453	57637	EFM200481	33514	69698	PSY103818
9392	45576	BAN102320	21454	57638	EFM200486	33515	69699	PSY103819
9393	45577	BAN102323	21455	57639	EFM200487	33516	69700	PSY103820
9394	45578	BAN102333	21456	57640	EFM200491	33517	69701	PSY103834
9395	45579	BAN102336	21457	57641	EFM200497	33518	69702	PSY103835
9396	45580	BAN102341	21458	57642	EFM200509	33519	69703	PSY103836
9397	45581	BAN102381	21459	57643	EFM200511	33520	69704	PSY103837
9398	45582	BAN102385	21460	57644	EFM200512	33521	69705	PSY103838
9399	45583	BAN102387	21461	57645	EFM200514	33522	69706	PSY103839
9400	45584	BAN102391	21462	57646	EFM200524	33523	69707	PSY103843

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9401	45585	BAN102397	21463	57647	EFM200535	33524	69708	PSY103844
9402	45586	BAN102413	21464	57648	EFM200541	33525	69709	PSY103845
9403	45587	BAN102443	21465	57649	EFM200542	33526	69710	PSY103846
9404	45588	BAN102445	21466	57650	EFM200545	33527	69711	PSY103847
9405	45589	BAN102446	21467	57651	EFM200546	33528	69712	PSY103849
9406	45590	BAN102454	21468	57652	EFM200554	33529	69713	PSY103851
9407	45591	BAN102459	21469	57653	EFM200558	33530	69714	PSY103854
9408	45592	BAN102461	21470	57654	EFM200562	33531	69715	PSY103856
9409	45593	BAN102478	21471	57655	EFM200577	33532	69716	PSY103858
9410	45594	BAN102480	21472	57656	EFM200585	33533	69717	PSY103859
9411	45595	BAN102481	21473	57657	EFM200589	33534	69718	PSY103860
9412	45596	BAN102482	21474	57658	EFM200591	33535	69719	PSY103867
9413	45597	BAN102487	21475	57659	EFM200592	33536	69720	PSY103869
9414	45598	BAN102492	21476	57660	EFM200599	33537	69721	PSY103871
9415	45599	BAN102502	21477	57661	EFM200610	33538	69722	PSY103874
9416	45600	BAN102504	21478	57662	EFM200622	33539	69723	PSY103885
9417	45601	BAN102511	21479	57663	EFM200623	33540	69724	PSY103891
9418	45602	BAN102515	21480	57664	EFM200625	33541	69725	PSY103899
9419	45603	BAN102521	21481	57665	EFM200632	33542	69726	PSY103901
9420	45604	BAN102524	21482	57666	EFM200633	33543	69727	PSY103902
9421	45605	BAN102528	21483	57667	EFM200643	33544	69728	PSY103927
9422	45606	BAN102540	21484	57668	EFM200644	33545	69729	PSY103929
9423	45607	BAN102544	21485	57669	EFM200649	33546	69730	PSY103933
9424	45608	BAN102566	21486	57670	EFM200654	33547	69731	PSY103942
9425	45609	BAN102568	21487	57671	EFM200659	33548	69732	PSY103947
9426	45610	BAN102570	21488	57672	EFM200666	33549	69733	PSY103954
9427	45611	BAN102576	21489	57673	EFM200671	33550	69734	PSY103957
9428	45612	BAN102589	21490	57674	EFM200673	33551	69735	PSY103958
9429	45613	BAN102596	21491	57675	EFM200686	33552	69736	PSY103965
9430	45614	BAN102598	21492	57676	EFM200695	33553	69737	PSY103969
9431	45615	BAN102602	21493	57677	EFM200699	33554	69738	PSY103972
9432	45616	BAN102603	21494	57678	EFM200702	33555	69739	PSY103984
9433	45617	BAN102604	21495	57679	EFM200703	33556	69740	PSY103987
9434	45618	BAN102615	21496	57680	EFM200706	33557	69741	PSY103995
9435	45619	BAN102623	21497	57681	EFM200709	33558	69742	PSY104020
9436	45620	BAN102625	21498	57682	EFM200718	33559	69743	PSY104029
9437	45621	BAN102628	21499	57683	EFM200723	33560	69744	PSY104037
9438	45622	BAN102648	21500	57684	EFM200729	33561	69745	PSY104038
9439	45623	BAN102650	21501	57685	EFM200737	33562	69746	PSY104041
9440	45624	BAN102654	21502	57686	EFM200738	33563	69747	PSY104047
9441	45625	BAN102671	21503	57687	EFM200739	33564	69748	PSY104048
9442	45626	BAN102675	21504	57688	EFM200744	33565	69749	PSY104064
9443	45627	BAN102691	21505	57689	EFM200763	33566	69750	PSY104066
9444	45628	BAN102692	21506	57690	EFM200768	33567	69751	PSY104072
9445	45629	BAN102708	21507	57691	EFM200770	33568	69752	PSY104073
9446	45630	BAN102711	21508	57692	EFM200772	33569	69753	PSY104080
9447	45631	BAN102742	21509	57693	EFM200783	33570	69754	PSY104084
9448	45632	BAN102744	21510	57694	EFM200791	33571	69755	PSY104130
9449	45633	BAN102783	21511	57695	EFM200794	33572	69756	PSY104146
9450	45634	BAN102784	21512	57696	EFM200795	33573	69757	PSY104152
9451	45635	BAN102785	21513	57697	EFM200797	33574	69758	PSY104164
9452	45636	BAN102807	21514	57698	EFM200803	33575	69759	PSY104166
9453	45637	BAN102824	21515	57699	EFM200811	33576	69760	PSY104168
9454	45638	BAN102826	21516	57700	EFM200824	33577	69761	PSY104174
9455	45639	BAN102833	21517	57701	EFM200826	33578	69762	PSY104175

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9456	45640	BAN102839	21518	57702	EFM200835	33579	69763	PSY104186
9457	45641	BAN102851	21519	57703	EFM200836	33580	69764	PSY104188
9458	45642	BAN102864	21520	57704	EFM200844	33581	69765	PSY104192
9459	45643	BAN102869	21521	57705	EFM200848	33582	69766	PSY104220
9460	45644	BAN102885	21522	57706	EFM200856	33583	69767	PSY104227
9461	45645	BAN102886	21523	57707	EFM200867	33584	69768	PSY104234
9462	45646	BAN102895	21524	57708	EFM200870	33585	69769	PSY104242
9463	45647	BAN102900	21525	57709	EFM200873	33586	69770	PSY104248
9464	45648	BAN102901	21526	57710	EFM200879	33587	69771	PSY104253
9465	45649	BAN102903	21527	57711	EFM200884	33588	69772	PSY104255
9466	45650	BAN102912	21528	57712	EFM200885	33589	69773	PSY104256
9467	45651	BAN102919	21529	57713	EFM200896	33590	69774	PSY104260
9468	45652	BAN102922	21530	57714	EFM200904	33591	69775	PSY104267
9469	45653	BAN102923	21531	57715	EFM200906	33592	69776	PSY104278
9470	45654	BAN102928	21532	57716	EFM200911	33593	69777	PSY104282
9471	45655	BAN102939	21533	57717	EFM200921	33594	69778	PSY104285
9472	45656	BAN102943	21534	57718	EFM200928	33595	69779	PSY104286
9473	45657	BAN102950	21535	57719	EFM200941	33596	69780	PSY104319
9474	45658	BAN102960	21536	57720	EFM200946	33597	69781	PSY104324
9475	45659	BAN102965	21537	57721	EFM200948	33598	69782	PSY104326
9476	45660	BAN102972	21538	57722	EFM200960	33599	69783	PSY104331
9477	45661	BAN102999	21539	57723	EFM200963	33600	69784	PSY104335
9478	45662	BAN103009	21540	57724	EFM200968	33601	69785	PSY104339
9479	45663	BAN103024	21541	57725	EFM200970	33602	69786	PSY104341
9480	45664	BAN103034	21542	57726	EFM200971	33603	69787	PSY104344
9481	45665	BAN103047	21543	57727	EFM200975	33604	69788	PSY104345
9482	45666	BAN103063	21544	57728	EFM200976	33605	69789	PSY104352
9483	45667	BAN103067	21545	57729	EFM200978	33606	69790	PSY104354
9484	45668	BAN103070	21546	57730	EFM200985	33607	69791	PSY104361
9485	45669	BAN103092	21547	57731	EFM200992	33608	69792	PSY104366
9486	45670	BAN103093	21548	57732	EFM200997	33609	69793	PSY104368
9487	45671	BAN103103	21549	57733	EFM201002	33610	69794	PSY104372
9488	45672	BAN103118	21550	57734	EFM201011	33611	69795	PSY104373
9489	45673	BAN103122	21551	57735	EFM201013	33612	69796	PSY104376
9490	45674	BAN103123	21552	57736	EFM201020	33613	69797	PSY104380
9491	45675	BAN103144	21553	57737	EFM201026	33614	69798	PSY104382
9492	45676	BAN103157	21554	57738	EFM201027	33615	69799	PSY104388
9493	45677	BAN103160	21555	57739	EFM201041	33616	69800	PSY104389
9494	45678	BAN103164	21556	57740	EFM201047	33617	69801	PSY104398
9495	45679	BAN103169	21557	57741	EFM201052	33618	69802	PSY104402
9496	45680	BAN103174	21558	57742	EFM201053	33619	69803	PSY104404
9497	45681	BAN103191	21559	57743	EFM201058	33620	69804	PSY104412
9498	45682	BAN103195	21560	57744	EFM201062	33621	69805	PSY104413
9499	45683	BAN103207	21561	57745	EFM201063	33622	69806	PSY104415
9500	45684	BAN103220	21562	57746	EFM201066	33623	69807	PSY104425
9501	45685	BAN103235	21563	57747	EFM201089	33624	69808	PSY104429
9502	45686	BAN103239	21564	57748	EFM201090	33625	69809	PSY104435
9503	45687	BAN103240	21565	57749	EFM201092	33626	69810	PSY104456
9504	45688	BAN103246	21566	57750	EFM201099	33627	69811	PSY104459
9505	45689	BAN103255	21567	57751	EFM201119	33628	69812	PSY104460
9506	45690	BAN103259	21568	57752	EFM201123	33629	69813	PSY104461
9507	45691	BAN103268	21569	57753	EFM201126	33630	69814	PSY104507
9508	45692	BAN103283	21570	57754	EFM201127	33631	69815	PSY104520
9509	45693	BAN103288	21571	57755	EFM201130	33632	69816	PSY104524
9510	45694	BAN103300	21572	57756	EFM201132	33633	69817	PSY104526

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9511	45695	BAN103323	21573	57757	EFM201135	33634	69818	PSY104527
9512	45696	BAN103335	21574	57758	EFM201136	33635	69819	PSY104529
9513	45697	BAN103338	21575	57759	EFM201140	33636	69820	PSY104543
9514	45698	BAN103376	21576	57760	EFM201145	33637	69821	PSY104544
9515	45699	BAN103380	21577	57761	EFM201153	33638	69822	PSY104546
9516	45700	BAN103383	21578	57762	EFM201158	33639	69823	PSY104552
9517	45701	BAN103387	21579	57763	EFM201162	33640	69824	PSY104559
9518	45702	BAN103413	21580	57764	EFM201171	33641	69825	PSY104584
9519	45703	BAN103415	21581	57765	EFM201176	33642	69826	PSY104596
9520	45704	BAN103430	21582	57766	EFM201177	33643	69827	PSY104618
9521	45705	BAN103460	21583	57767	EFM201199	33644	69828	PSY104621
9522	45706	BAN103462	21584	57768	EFM201219	33645	69829	PSY104623
9523	45707	BAN103467	21585	57769	EFM201224	33646	69830	PSY104628
9524	45708	BAN103472	21586	57770	EFM201232	33647	69831	PSY104645
9525	45709	BAN103479	21587	57771	EFM201233	33648	69832	PSY104669
9526	45710	BAN103496	21588	57772	EFM201241	33649	69833	PSY104679
9527	45711	BAN103501	21589	57773	EFM201242	33650	69834	PSY104681
9528	45712	BAN103523	21590	57774	EFM201250	33651	69835	PSY104683
9529	45713	BAN103527	21591	57775	EFM201252	33652	69836	PSY104696
9530	45714	BAN103528	21592	57776	EFM201272	33653	69837	PSY104698
9531	45715	BAN103529	21593	57777	EFM201273	33654	69838	PSY104709
9532	45716	BAN103536	21594	57778	EFM201282	33655	69839	PSY104726
9533	45717	BAN103564	21595	57779	EFM201283	33656	69840	PSY104746
9534	45718	BAN103579	21596	57780	EFM201297	33657	69841	PSY104750
9535	45719	BAN103594	21597	57781	EFM201302	33658	69842	PSY104751
9536	45720	BAN103600	21598	57782	EFM201307	33659	69843	PSY104754
9537	45721	BAN103601	21599	57783	EFM201311	33660	69844	PSY104756
9538	45722	BAN103625	21600	57784	EFM201314	33661	69845	PSY104758
9539	45723	BAN103630	21601	57785	EFM201316	33662	69846	PSY104769
9540	45724	BAN103651	21602	57786	EFM201317	33663	69847	PSY104777
9541	45725	BAN103655	21603	57787	EFM201322	33664	69848	PSY104780
9542	45726	BAN103658	21604	57788	EFM201332	33665	69849	PSY104787
9543	45727	BAN103666	21605	57789	EFM201334	33666	69850	PSY104789
9544	45728	BAN103675	21606	57790	EFM201335	33667	69851	PSY104792
9545	45729	BAN103692	21607	57791	EFM201338	33668	69852	PSY104793
9546	45730	BAN103704	21608	57792	EFM201340	33669	69853	PSY104799
9547	45731	BAN103717	21609	57793	EFM201347	33670	69854	PSY104801
9548	45732	BAN103721	21610	57794	EFM201349	33671	69855	PSY104811
9549	45733	BAN103750	21611	57795	EFM201350	33672	69856	PSY104822
9550	45734	BAN103767	21612	57796	EFM201355	33673	69857	PSY104827
9551	45735	BAN103769	21613	57797	EFM201359	33674	69858	PSY104828
9552	45736	BAN103770	21614	57798	EFM201370	33675	69859	PSY104829
9553	45737	BAN103772	21615	57799	EFM201371	33676	69860	PSY104832
9554	45738	BAN103775	21616	57800	EFM201378	33677	69861	PSY104834
9555	45739	BAN103777	21617	57801	EFM201379	33678	69862	PSY104836
9556	45740	BAN103787	21618	57802	EFM201384	33679	69863	PSY104838
9557	45741	BAN103797	21619	57803	EFM201387	33680	69864	PSY104852
9558	45742	BAN103804	21620	57804	EFM201394	33681	69865	PSY104853
9559	45743	BAN103810	21621	57805	EFM201395	33682	69866	PSY104859
9560	45744	BAN103821	21622	57806	EFM201399	33683	69867	PSY104861
9561	45745	BAN103832	21623	57807	EFM201407	33684	69868	PSY104865
9562	45746	BAN103843	21624	57808	EFM201409	33685	69869	PSY104867
9563	45747	BAN103847	21625	57809	EFM201416	33686	69870	PSY104872
9564	45748	BAN103848	21626	57810	EFM201424	33687	69871	PSY104878
9565	45749	BAN103862	21627	57811	EFM201425	33688	69872	PSY104886

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9566	45750	BAN103869	21628	57812	EFM201430	33689	69873	PSY104889
9567	45751	BAN103886	21629	57813	EFM201438	33690	69874	PSY104896
9568	45752	BAN103890	21630	57814	EFM201449	33691	69875	PSY104903
9569	45753	BAN103900	21631	57815	EFM201455	33692	69876	PSY104919
9570	45754	BAN103905	21632	57816	EFM201460	33693	69877	PSY104923
9571	45755	BAN103921	21633	57817	EFM201462	33694	69878	PSY104929
9572	45756	BAN103931	21634	57818	EFM201470	33695	69879	PSY104934
9573	45757	BAN103932	21635	57819	EFM201482	33696	69880	PSY104950
9574	45758	BAN103936	21636	57820	EFM201484	33697	69881	PSY104951
9575	45759	BAN103939	21637	57821	EFM201485	33698	69882	PSY104957
9576	45760	BAN103946	21638	57822	EFM201490	33699	69883	PSY104961
9577	45761	BAN103959	21639	57823	EFM201491	33700	69884	PSY104967
9578	45762	BAN103960	21640	57824	EFM201493	33701	69885	PSY104974
9579	45763	BAN103966	21641	57825	EFM201504	33702	69886	PSY104985
9580	45764	BAN103970	21642	57826	EFM201522	33703	69887	PSY104995
9581	45765	BAN103991	21643	57827	EFM201524	33704	69888	PSY104998
9582	45766	BAN103992	21644	57828	EFM201535	33705	69889	PSY105004
9583	45767	BAN104006	21645	57829	EFM201537	33706	69890	PSY105010
9584	45768	BAN104007	21646	57830	EFM201540	33707	69891	PSY105014
9585	45769	BAN104019	21647	57831	EFM201542	33708	69892	PSY105016
9586	45770	BAN104023	21648	57832	EFM201544	33709	69893	PSY105020
9587	45771	BAN104028	21649	57833	EFM201546	33710	69894	PSY105025
9588	45772	BAN104029	21650	57834	EFM201549	33711	69895	PSY105027
9589	45773	BAN104033	21651	57835	EFM201550	33712	69896	PSY105033
9590	45774	BAN104044	21652	57836	EFM201553	33713	69897	PSY105035
9591	45775	BAN104049	21653	57837	EFM201563	33714	69898	PSY105041
9592	45776	BAN104051	21654	57838	EFM201574	33715	69899	PSY105063
9593	45777	BAN104054	21655	57839	EFM201578	33716	69900	PSY105067
9594	45778	BAN104072	21656	57840	EFM201584	33717	69901	PSY105068
9595	45779	BAN104073	21657	57841	EFM201597	33718	69902	PSY105070
9596	45780	BAN104092	21658	57842	EFM201598	33719	69903	PSY105072
9597	45781	BAN104117	21659	57843	EFM201601	33720	69904	PSY105075
9598	45782	BAN104126	21660	57844	EFM201604	33721	69905	PSY105080
9599	45783	BAN104131	21661	57845	EFM201617	33722	69906	PSY105088
9600	45784	BAN104134	21662	57846	EFM201620	33723	69907	PSY105093
9601	45785	BAN104142	21663	57847	EFM201621	33724	69908	PSY105099
9602	45786	BAN104146	21664	57848	EFM201626	33725	69909	PSY105102
9603	45787	BAN104147	21665	57849	EFM201627	33726	69910	PSY105127
9604	45788	BAN104148	21666	57850	EFM201634	33727	69911	PSY105133
9605	45789	BAN104150	21667	57851	EFM201642	33728	69912	PSY105138
9606	45790	BAN104164	21668	57852	EFM201649	33729	69913	PSY105144
9607	45791	BAN104169	21669	57853	EFM201652	33730	69914	PSY105147
9608	45792	BAN104171	21670	57854	EFM201656	33731	69915	PSY105149
9609	45793	BAN104173	21671	57855	EFM201658	33732	69916	PSY105156
9610	45794	BAN104177	21672	57856	EFM201661	33733	69917	PSY105158
9611	45795	BAN104198	21673	57857	EFM201664	33734	69918	PSY105160
9612	45796	BAN104199	21674	57858	EFM201665	33735	69919	PSY105164
9613	45797	BAN104200	21675	57859	EFM201679	33736	69920	PSY105168
9614	45798	BAN104202	21676	57860	EFM201682	33737	69921	PSY105185
9615	45799	BAN104217	21677	57861	EFM201684	33738	69922	PSY105186
9616	45800	BAN104237	21678	57862	EFM201685	33739	69923	PSY105188
9617	45801	BAN104255	21679	57863	EFM201693	33740	69924	PSY105194
9618	45802	BAN104276	21680	57864	EFM201694	33741	69925	PSY105195
9619	45803	BAN104280	21681	57865	EFM201703	33742	69926	PSY105197
9620	45804	BAN104283	21682	57866	EFM201704	33743	69927	PSY105203

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9621	45805	BAN104289	21683	57867	EFM201740	33744	69928	PSY105223
9622	45806	BAN104310	21684	57868	EFM201744	33745	69929	PSY105227
9623	45807	BAN104316	21685	57869	EFM201754	33746	69930	PSY105244
9624	45808	BAN104327	21686	57870	EFM201757	33747	69931	PSY105245
9625	45809	BAN104329	21687	57871	EFM201761	33748	69932	PSY105268
9626	45810	BAN104342	21688	57872	EFM201766	33749	69933	PSY105277
9627	45811	BAN104354	21689	57873	EFM201769	33750	69934	PSY105284
9628	45812	BAN104355	21690	57874	EFM201770	33751	69935	PSY105291
9629	45813	BAN104356	21691	57875	EFM201771	33752	69936	PSY105293
9630	45814	BAN104365	21692	57876	EFM201772	33753	69937	PSY105300
9631	45815	BAN104384	21693	57877	EFM201777	33754	69938	PSY105302
9632	45816	BAN104389	21694	57878	EFM201788	33755	69939	PSY105303
9633	45817	BAN104393	21695	57879	EFM201806	33756	69940	PSY105304
9634	45818	BAN104397	21696	57880	EFM201807	33757	69941	PSY105309
9635	45819	BAN104405	21697	57881	EFM201814	33758	69942	PSY105311
9636	45820	BAN104418	21698	57882	EFM201820	33759	69943	PSY105312
9637	45821	BAN104442	21699	57883	EFM201822	33760	69944	PSY105328
9638	45822	BAN104444	21700	57884	EFM201829	33761	69945	PSY105329
9639	45823	BAN104448	21701	57885	EFM201833	33762	69946	PSY105339
9640	45824	BAN104454	21702	57886	EFM201835	33763	69947	PSY105342
9641	45825	BAN104459	21703	57887	EFM201839	33764	69948	PSY105386
9642	45826	BAN104482	21704	57888	EFM201841	33765	69949	PSY105400
9643	45827	BAN104489	21705	57889	EFM201843	33766	69950	PSY105402
9644	45828	BAN104503	21706	57890	EFM201852	33767	69951	PSY105412
9645	45829	BAN104504	21707	57891	EFM201855	33768	69952	PSY105421
9646	45830	BAN104506	21708	57892	EFM201858	33769	69953	PSY105427
9647	45831	BAN104507	21709	57893	EFM201878	33770	69954	PSY105429
9648	45832	BAN104510	21710	57894	EFM201881	33771	69955	PSY105439
9649	45833	BAN104523	21711	57895	EFM201887	33772	69956	PSY105445
9650	45834	BAN104525	21712	57896	EFM201888	33773	69957	PSY105455
9651	45835	BAN104528	21713	57897	EFM201893	33774	69958	PSY105457
9652	45836	BAN104535	21714	57898	EFM201897	33775	69959	PSY105462
9653	45837	BAN104549	21715	57899	EFM201900	33776	69960	PSY105481
9654	45838	BAN104566	21716	57900	EFM201908	33777	69961	PSY105486
9655	45839	BAN104572	21717	57901	EFM201911	33778	69962	PSY105487
9656	45840	BAN104592	21718	57902	EFM201913	33779	69963	PSY105502
9657	45841	BAN104595	21719	57903	EFM201914	33780	69964	PSY105509
9658	45842	BAN104603	21720	57904	EFM201919	33781	69965	PSY105521
9659	45843	BAN104612	21721	57905	EFM201924	33782	69966	PSY105528
9660	45844	BAN104614	21722	57906	EFM201941	33783	69967	PSY105545
9661	45845	BAN104616	21723	57907	EFM201945	33784	69968	PSY105556
9662	45846	BAN104617	21724	57908	EFM201956	33785	69969	PSY105558
9663	45847	BAN104627	21725	57909	EFM201961	33786	69970	PSY105562
9664	45848	BAN104641	21726	57910	EFM201962	33787	69971	PSY105567
9665	45849	BAN104645	21727	57911	EFM201963	33788	69972	PSY105573
9666	45850	BAN104655	21728	57912	EFM201964	33789	69973	PSY105580
9667	45851	BAN104659	21729	57913	EFM201966	33790	69974	PSY105582
9668	45852	BAN104661	21730	57914	EFM201975	33791	69975	PSY105587
9669	45853	BAN104682	21731	57915	EFM201980	33792	69976	PSY105601
9670	45854	BAN104683	21732	57916	EFM201982	33793	69977	PSY105603
9671	45855	BAN104689	21733	57917	EFM201984	33794	69978	PSY105642
9672	45856	BAN104705	21734	57918	EFM201990	33795	69979	PSY105667
9673	45857	BAN104708	21735	57919	EFM201993	33796	69980	PSY105678
9674	45858	BAN104719	21736	57920	EFM201996	33797	69981	PSY105710
9675	45859	BAN104770	21737	57921	EFM202000	33798	69982	PSY105711

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9676	45860	BAN104773	21738	57922	EFM202030	33799	69983	PSY105729
9677	45861	BAN104776	21739	57923	EFM202034	33800	69984	PSY105734
9678	45862	BAN104787	21740	57924	EFM202037	33801	69985	PSY105755
9679	45863	BAN104797	21741	57925	EFM202041	33802	69986	PSY105757
9680	45864	BAN104798	21742	57926	EFM202042	33803	69987	PSY105770
9681	45865	BAN104809	21743	57927	EFM202044	33804	69988	PSY105774
9682	45866	BAN104824	21744	57928	EFM202049	33805	69989	PSY105778
9683	45867	BAN104835	21745	57929	EFM202051	33806	69990	PSY105780
9684	45868	BAN104843	21746	57930	EFM202052	33807	69991	PSY105783
9685	45869	BAN104847	21747	57931	EFM202055	33808	69992	PSY105785
9686	45870	BAN104850	21748	57932	EFM202057	33809	69993	PSY105787
9687	45871	BAN104855	21749	57933	EFM202058	33810	69994	PSY105816
9688	45872	BAN104864	21750	57934	EFM202059	33811	69995	PSY105821
9689	45873	BAN104869	21751	57935	EFM202069	33812	69996	PSY105833
9690	45874	BAN104874	21752	57936	EFM202072	33813	69997	PSY105880
9691	45875	BAN104875	21753	57937	EFM202075	33814	69998	PSY105925
9692	45876	BAN104879	21754	57938	EFM202076	33815	69999	PSY105970
9693	45877	BAN104882	21755	57939	EFM202078	33816	70000	PSY105983
9694	45878	BAN104884	21756	57940	EFM202084	33817	70001	PSY106018
9695	45879	BAN104895	21757	57941	EFM202090	33818	70002	PSY106020
9696	45880	BAN104917	21758	57942	EFM202099	33819	70003	PSY106056
9697	45881	BAN104921	21759	57943	EFM202104	33820	70004	PSY106080
9698	45882	BAN104922	21760	57944	EFM202118	33821	70005	PSY106085
9699	45883	BAN104923	21761	57945	EFM202131	33822	70006	PSY106101
9700	45884	BAN104943	21762	57946	EFM202134	33823	70007	PSY106154
9701	45885	BAN104944	21763	57947	EFM202150	33824	70008	PSY106182
9702	45886	BAN104945	21764	57948	EFM202154	33825	70009	PSY106207
9703	45887	BAN104960	21765	57949	EFM202157	33826	70010	PSY106217
9704	45888	BAN104972	21766	57950	EFM202159	33827	70011	PSY106253
9705	45889	BAN104975	21767	57951	EFM202173	33828	70012	PSY106254
9706	45890	BAN104995	21768	57952	EFM202174	33829	70013	PSY106273
9707	45891	BAN105001	21769	57953	EFM202176	33830	70014	PSY106301
9708	45892	BAN105004	21770	57954	EFM202201	33831	70015	PSY106346
9709	45893	BAN105005	21771	57955	EFM202205	33832	70016	PSY106353
9710	45894	BAN105008	21772	57956	EFM202208	33833	70017	PSY106453
9711	45895	BAN105024	21773	57957	EFM202214	33834	70018	PSY106472
9712	45896	BAN105027	21774	57958	EFM202215	33835	70019	PSY106485
9713	45897	BAN105036	21775	57959	EFM202223	33836	70020	PSY106503
9714	45898	BAN105057	21776	57960	EFM202225	33837	70021	PSY106521
9715	45899	BAN105078	21777	57961	EFM202229	33838	70022	PSY106524
9716	45900	BAN105079	21778	57962	EFM202235	33839	70023	PSY106530
9717	45901	BAN105083	21779	57963	EFM202242	33840	70024	PSY106535
9718	45902	BAN105088	21780	57964	EFM202247	33841	70025	PSY106549
9719	45903	BAN105100	21781	57965	EFM202258	33842	70026	PSY106552
9720	45904	BAN105102	21782	57966	EFM202260	33843	70027	PSY106594
9721	45905	BAN105110	21783	57967	EFM202262	33844	70028	PSY106607
9722	45906	BAN105113	21784	57968	EFM202271	33845	70029	PSY106620
9723	45907	BAN105118	21785	57969	EFM202278	33846	70030	PSY106622
9724	45908	BAN105119	21786	57970	EFM202289	33847	70031	PSY106624
9725	45909	BAN105122	21787	57971	EFM202291	33848	70032	PSY106628
9726	45910	BAN105134	21788	57972	EFM202293	33849	70033	PSY106670
9727	45911	BAN105137	21789	57973	EFM202294	33850	70034	PSY106678
9728	45912	BAN105148	21790	57974	EFM202301	33851	70035	PSY106718
9729	45913	BAN105155	21791	57975	EFM202322	33852	70036	PSY106730
9730	45914	BAN105157	21792	57976	EFM202323	33853	70037	PSY106808

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9731	45915	BAN105171	21793	57977	EFM202324	33854	70038	PSY106811
9732	45916	BAN105173	21794	57978	EFM202328	33855	70039	PSY106814
9733	45917	BAN105174	21795	57979	EFM202335	33856	70040	PSY106827
9734	45918	BAN105190	21796	57980	EFM202341	33857	70041	PSY106861
9735	45919	BAN105196	21797	57981	EFM202343	33858	70042	PSY106866
9736	45920	BAN105200	21798	57982	EFM202344	33859	70043	PSY106880
9737	45921	BAN105201	21799	57983	EFM202362	33860	70044	PSY106900
9738	45922	BAN105206	21800	57984	EFM202376	33861	70045	PSY106919
9739	45923	BAN105219	21801	57985	EFM202382	33862	70046	PSY106920
9740	45924	BAN105225	21802	57986	EFM202384	33863	70047	PSY106953
9741	45925	BAN105227	21803	57987	EFM202389	33864	70048	PSY106959
9742	45926	BAN105234	21804	57988	EFM202390	33865	70049	PSY106991
9743	45927	BAN105237	21805	57989	EFM202393	33866	70050	PSY107002
9744	45928	BAN105239	21806	57990	EFM202396	33867	70051	PSY107011
9745	45929	BAN105241	21807	57991	EFM202397	33868	70052	PSY107045
9746	45930	BAN105249	21808	57992	EFM202398	33869	70053	PSY107047
9747	45931	BAN105252	21809	57993	EFM202400	33870	70054	PSY107055
9748	45932	BAN105253	21810	57994	EFM202409	33871	70055	PSY107058
9749	45933	BAN105255	21811	57995	EFM202414	33872	70056	PSY107059
9750	45934	BAN105257	21812	57996	EFM202426	33873	70057	PSY107065
9751	45935	BAN105261	21813	57997	EFM202427	33874	70058	PSY107072
9752	45936	BAN105277	21814	57998	EFM202433	33875	70059	PSY107079
9753	45937	BAN105284	21815	57999	EFM202440	33876	70060	PSY107080
9754	45938	BAN105317	21816	58000	EFM202444	33877	70061	PSY107134
9755	45939	BAN105329	21817	58001	EFM202446	33878	70062	PSY107158
9756	45940	BAN105335	21818	58002	EFM202451	33879	70063	PSY107166
9757	45941	BAN105349	21819	58003	EFM202454	33880	70064	PSY107231
9758	45942	BAN105353	21820	58004	EFM202456	33881	70065	PSY107311
9759	45943	BAN105354	21821	58005	EFM202462	33882	70066	PSY107333
9760	45944	BAN105357	21822	58006	EFM202467	33883	70067	PSY107337
9761	45945	BAN105377	21823	58007	EFM202471	33884	70068	PSY107373
9762	45946	BAN105383	21824	58008	EFM202473	33885	70069	PSY107398
9763	45947	BAN105387	21825	58009	EFM202475	33886	70070	PSY107421
9764	45948	BAN105395	21826	58010	EFM202480	33887	70071	PSY107438
9765	45949	BAN105396	21827	58011	EFM202483	33888	70072	PSY107471
9766	45950	BAN105403	21828	58012	EFM202484	33889	70073	PSY107474
9767	45951	BAN105404	21829	58013	EFM202514	33890	70074	PSY107482
9768	45952	BAN105415	21830	58014	EFM202519	33891	70075	PSY107484
9769	45953	BAN105418	21831	58015	EFM202534	33892	70076	PSY107494
9770	45954	BAN105419	21832	58016	EFM202536	33893	70077	PSY107523
9771	45955	BAN105420	21833	58017	EFM202538	33894	70078	PSY107524
9772	45956	BAN105429	21834	58018	EFM202542	33895	70079	PSY107526
9773	45957	BAN105442	21835	58019	EFM202549	33896	70080	PSY107592
9774	45958	BAN105443	21836	58020	EFM202552	33897	70081	PSY107623
9775	45959	BAN105487	21837	58021	EFM202554	33898	70082	PSY107655
9776	45960	BAN105490	21838	58022	EFM202558	33899	70083	PSY107658
9777	45961	BAN105506	21839	58023	EFM202567	33900	70084	PSY107666
9778	45962	BAN105510	21840	58024	EFM202569	33901	70085	PSY107681
9779	45963	BAN105516	21841	58025	EFM202571	33902	70086	PSY107686
9780	45964	BAN105520	21842	58026	EFM202572	33903	70087	PSY107712
9781	45965	BAN105525	21843	58027	EFM202573	33904	70088	PSY107733
9782	45966	BAN105533	21844	58028	EFM202575	33905	70089	PSY107786
9783	45967	BAN105541	21845	58029	EFM202587	33906	70090	PSY107807
9784	45968	BAN105544	21846	58030	EFM202588	33907	70091	PSY107850
9785	45969	BAN105551	21847	58031	EFM202592	33908	70092	PSY107890

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9786	45970	BAN105583	21848	58032	EFM202599	33909	70093	PSY107923
9787	45971	BAN105591	21849	58033	EFM202602	33910	70094	PSY107951
9788	45972	BAN105594	21850	58034	EFM202604	33911	70095	PSY107961
9789	45973	BAN105601	21851	58035	EFM202614	33912	70096	PSY107996
9790	45974	BAN105602	21852	58036	EFM202615	33913	70097	PSY107999
9791	45975	BAN105613	21853	58037	EFM202619	33914	70098	PSY108012
9792	45976	BAN105614	21854	58038	EFM202621	33915	70099	PSY108013
9793	45977	BAN105621	21855	58039	EFM202622	33916	70100	PSY108019
9794	45978	BAN105638	21856	58040	EFM202624	33917	70101	PSY108021
9795	45979	BAN105647	21857	58041	EFM202626	33918	70102	PSY108023
9796	45980	BAN105656	21858	58042	EFM202627	33919	70103	PSY108044
9797	45981	BAN105678	21859	58043	EFM202632	33920	70104	PSY108061
9798	45982	BAN105693	21860	58044	EFM202633	33921	70105	PSY108064
9799	45983	BAN105697	21861	58045	EFM202637	33922	70106	PSY108075
9800	45984	BAN105708	21862	58046	EFM202638	33923	70107	PSY108079
9801	45985	BAN105723	21863	58047	EFM202652	33924	70108	PSY108092
9802	45986	BAN105732	21864	58048	EFM202675	33925	70109	PSY108097
9803	45987	BAN105734	21865	58049	HIN100001	33926	70110	PSY108098
9804	45988	BAN105739	21866	58050	HIN100003	33927	70111	PSY108115
9805	45989	BAN105743	21867	58051	HIN100008	33928	70112	PSY108132
9806	45990	BAN105748	21868	58052	HIN100011	33929	70113	PSY108146
9807	45991	BAN105755	21869	58053	HIN100012	33930	70114	PSY108150
9808	45992	BAN105757	21870	58054	HIN100014	33931	70115	PSY108154
9809	45993	BAN105758	21871	58055	HIN100021	33932	70116	PSY108183
9810	45994	BAN105760	21872	58056	HIN100022	33933	70117	PSY108238
9811	45995	BAN105768	21873	58057	HIN100025	33934	70118	PSY108243
9812	45996	BAN105770	21874	58058	HIN100032	33935	70119	PSY108250
9813	45997	BAN105775	21875	58059	HIN100035	33936	70120	PSY108276
9814	45998	BAN105778	21876	58060	HIN100036	33937	70121	PSY108279
9815	45999	BAN105779	21877	58061	HIN100052	33938	70122	PSY108282
9816	46000	BAN105784	21878	58062	HIN100053	33939	70123	PSY108284
9817	46001	BAN105787	21879	58063	HIN100059	33940	70124	PSY108294
9818	46002	BAN105788	21880	58064	HIN100061	33941	70125	PSY108313
9819	46003	BAN105794	21881	58065	HIN100062	33942	70126	PSY108357
9820	46004	BAN105795	21882	58066	HIN100063	33943	70127	PSY108358
9821	46005	BAN105811	21883	58067	HIN100065	33944	70128	PSY108373
9822	46006	BAN105813	21884	58068	HIN100066	33945	70129	PSY108380
9823	46007	BAN105843	21885	58069	HIN100070	33946	70130	PSY108387
9824	46008	BAN105856	21886	58070	HIN100077	33947	70131	PSY108388
9825	46009	BAN105857	21887	58071	HIN100085	33948	70132	PSY108390
9826	46010	BAN105862	21888	58072	HIN100086	33949	70133	PSY108408
9827	46011	BAN105878	21889	58073	HIN100087	33950	70134	PSY108481
9828	46012	BAN105883	21890	58074	HIN100088	33951	70135	PSY108491
9829	46013	BAN105885	21891	58075	HIN100089	33952	70136	PSY108507
9830	46014	BAN105886	21892	58076	HIN100092	33953	70137	PSY108510
9831	46015	BAN105904	21893	58077	HIN100103	33954	70138	PSY108533
9832	46016	BAN105909	21894	58078	HIN100105	33955	70139	PSY108566
9833	46017	BAN105931	21895	58079	HIN100109	33956	70140	PSY108622
9834	46018	BAN105947	21896	58080	HIN100119	33957	70141	PSY108633
9835	46019	BAN105948	21897	58081	HIN100123	33958	70142	PSY108661
9836	46020	BAN105953	21898	58082	HIN100127	33959	70143	PSY108736
9837	46021	BAN105954	21899	58083	HIN100128	33960	70144	PSY108744
9838	46022	BAN105960	21900	58084	HIN100129	33961	70145	PSY108753
9839	46023	BAN105967	21901	58085	HIN100133	33962	70146	PSY108754
9840	46024	BAN105978	21902	58086	HIN100134	33963	70147	PSY108757

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9841	46025	BAN105979	21903	58087	HIN100139	33964	70148	PSY108771
9842	46026	BAN105988	21904	58088	HIN100145	33965	70149	PSY108786
9843	46027	BAN105989	21905	58089	HIN100147	33966	70150	PSY108788
9844	46028	BAN106003	21906	58090	HIN100148	33967	70151	PSY108790
9845	46029	BAN106013	21907	58091	HIN100149	33968	70152	PSY108820
9846	46030	BAN106019	21908	58092	HIN100150	33969	70153	PSY108825
9847	46031	BAN106020	21909	58093	HIN100154	33970	70154	PSY108848
9848	46032	BAN106021	21910	58094	HIN100165	33971	70155	PSY108879
9849	46033	BAN106044	21911	58095	HIN100176	33972	70156	PSY108972
9850	46034	BAN106066	21912	58096	HIN100179	33973	70157	PSY108977
9851	46035	BAN106068	21913	58097	HIN100182	33974	70158	PSY108978
9852	46036	BAN106076	21914	58098	HIN100185	33975	70159	PSY109012
9853	46037	BAN106081	21915	58099	HIN100186	33976	70160	PSY109052
9854	46038	BAN106091	21916	58100	HIN100191	33977	70161	PSY109074
9855	46039	BAN106094	21917	58101	HIN100192	33978	70162	PSY109085
9856	46040	BAN106100	21918	58102	HIN100193	33979	70163	PSY109122
9857	46041	BAN106101	21919	58103	HIN100194	33980	70164	PSY109124
9858	46042	BAN106118	21920	58104	HIN100196	33981	70165	PSY109125
9859	46043	BAN106129	21921	58105	HIN100201	33982	70166	PSY109131
9860	46044	BAN106136	21922	58106	HIN100202	33983	70167	SAU101362
9861	46045	BAN106141	21923	58107	HIN100213	33984	70168	SAU101783
9862	46046	BAN106145	21924	58108	HIN100217	33985	70169	SAU103910
9863	46047	BAN106147	21925	58109	HIN100220	33986	70170	SAU103974
9864	46048	BAN106148	21926	58110	HIN100222	33987	70171	SAU200831
9865	46049	BAN106149	21927	58111	HIN100223	33988	70172	SAU202063
9866	46050	BAN106152	21928	58112	HIN100233	33989	70173	SAU300286
9867	46051	BAN106158	21929	58113	HIN100234	33990	70174	SAU300348
9868	46052	BAN106164	21930	58114	HIN100236	33991	70175	SAU300377
9869	46053	BAN106168	21931	58115	HIN100237	33992	70176	SAU301268
9870	46054	BAN106184	21932	58116	HIN100246	33993	70177	SAU301276
9871	46055	BAN106190	21933	58117	HIN100251	33994	70178	SAU301338
9872	46056	BAN106191	21934	58118	HIN100253	33995	70179	SAU301432
9873	46057	BAN106204	21935	58119	HIN100254	33996	70180	SAU301433
9874	46058	BAN106207	21936	58120	HIN100255	33997	70181	SAU302002
9875	46059	BAN106208	21937	58121	HIN100261	33998	70182	SAU302613
9876	46060	BAN106209	21938	58122	HIN100264	33999	70183	SAU302626
9877	46061	BAN106218	21939	58123	HIN100274	34000	70184	SAU302683
9878	46062	BAN106223	21940	58124	HIN100275	34001	70185	SAU302807
9879	46063	BAN106226	21941	58125	HIN100276	34002	70186	SAU302816
9880	46064	BAN106232	21942	58126	HIN100277	34003	70187	SAU302851
9881	46065	BAN106235	21943	58127	HIN100278	34004	70188	SAU302873
9882	46066	BAN106237	21944	58128	HIN100280	34005	70189	SAU302874
9883	46067	BAN106241	21945	58129	HIN100281	34006	70190	SAU401674
9884	46068	BAN106248	21946	58130	HIN100287	34007	70191	SAU401722
9885	46069	BAN106254	21947	58131	HIN100288	34008	70192	SAU402924
9886	46070	BAN106269	21948	58132	HIN100289	34009	70193	SAU500005
9887	46071	BAN106274	21949	58133	HIN100291	34010	70194	SAU500044
9888	46072	BAN106284	21950	58134	HIN100295	34011	70195	SAU500516
9889	46073	BAN106286	21951	58135	HIN100302	34012	70196	SAU501115
9890	46074	BAN106294	21952	58136	HIN100304	34013	70197	SAU501460
9891	46075	BAN106298	21953	58137	HIN100307	34014	70198	SAU501627
9892	46076	BAN106302	21954	58138	HIN100317	34015	70199	SAU502067
9893	46077	BAN106306	21955	58139	HIN100318	34016	70200	SAU502622
9894	46078	BAN106315	21956	58140	HIN100319	34017	70201	SAU502668
9895	46079	BAN106323	21957	58141	HIN100331	34018	70202	SAU502782

WO 02/077183									PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9896	46080	BAN106351	21958	58142	HIN100338	34019	70203	SAU502913			
9897	46081	BAN106361	21959	58143	HIN100341	34020	70204	SAU504261			
9898	46082	BAN106364	21960	58144	HIN100346	34021	70205	SAU504318			
9899	46083	BAN106367	21961	58145	HIN100347	34022	70206	SAU504414			
9900	46084	BAN106368	21962	58146	HIN100348	34023	70207	SAU600734			
9901	46085	BAN106371	21963	58147	HIN100356	34024	70208	SAU602660			
9902	46086	BAN106373	21964	58148	HIN100358	34025	70209	SAU603307			
9903	46087	BAN106376	21965	58149	HIN100372	34026	70210	SAU702154			
9904	46088	BAN106385	21966	58150	HIN100373	34027	70211	SAU800009			
9905	46089	BAN106396	21967	58151	HIN100377	34028	70212	SAU800039			
9906	46090	BAN106411	21968	58152	HIN100379	34029	70213	SAU800073			
9907	46091	BAN106428	21969	58153	HIN100380	34030	70214	SAU800097			
9908	46092	BAN106432	21970	58154	HIN100381	34031	70215	SAU800099			
9909	46093	BAN106436	21971	58155	HIN100382	34032	70216	SAU800100			
9910	46094	BAN106450	21972	58156	HIN100383	34033	70217	SAU800104			
9911	46095	BAN106461	21973	58157	HIN100384	34034	70218	SAU800107			
9912	46096	BAN106466	21974	58158	HIN100386	34035	70219	SAU800108			
9913	46097	BAN106468	21975	58159	HIN100389	34036	70220	SAU800119			
9914	46098	BAN106478	21976	58160	HIN100395	34037	70221	SAU800132			
9915	46099	BAN106494	21977	58161	HIN100397	34038	70222	SAU800159			
9916	46100	BAN106497	21978	58162	HIN100399	34039	70223	SAU800167			
9917	46101	BAN106500	21979	58163	HIN100409	34040	70224	SAU800178			
9918	46102	BAN106505	21980	58164	HIN100410	34041	70225	SAU800197			
9919	46103	BAN106514	21981	58165	HIN100420	34042	70226	SAU800207			
9920	46104	BAN106537	21982	58166	HIN100421	34043	70227	SAU800212			
9921	46105	BAN106540	21983	58167	HIN100422	34044	70228	SAU800214			
9922	46106	BAN106546	21984	58168	HIN100423	34045	70229	SAU800227			
9923	46107	BAN106548	21985	58169	HIN100424	34046	70230	SAU800242			
9924	46108	BAN106549	21986	58170	HIN100426	34047	70231	SAU800243			
9925	46109	BAN106551	21987	58171	HIN100427	34048	70232	SAU800247			
9926	46110	BAN106562	21988	58172	HIN100428	34049	70233	SAU800269			
9927	46111	BAN106565	21989	58173	HIN100432	34050	70234	SAU800348			
9928	46112	BAN106567	21990	58174	HIN100434	34051	70235	SAU800365			
9929	46113	BAN106573	21991	58175	HIN100435	34052	70236	SAU800374			
9930	46114	BAN106583	21992	58176	HIN100436	34053	70237	SAU800401			
9931	46115	BAN106592	21993	58177	HIN100440	34054	70238	SAU800423			
9932	46116	BAN106594	21994	58178	HIN100442	34055	70239	SAU800425			
9933	46117	BAN106606	21995	58179	HIN100446	34056	70240	SAU800426			
9934	46118	BAN106611	21996	58180	HIN100447	34057	70241	SAU800427			
9935	46119	BAN106612	21997	58181	HIN100448	34058	70242	SAU800428			
9936	46120	BAN106622	21998	58182	HIN100461	34059	70243	SAU800429			
9937	46121	BAN106629	21999	58183	HIN100462	34060	70244	SAU800433			
9938	46122	BAN106664	22000	58184	HIN100463	34061	70245	SAU800450			
9939	46123	BAN106673	22001	58185	HIN100464	34062	70246	SAU800484			
9940	46124	BAN106675	22002	58186	HIN100465	34063	70247	SAU800500			
9941	46125	BAN106687	22003	58187	HIN100467	34064	70248	SAU800501			
9942	46126	BAN106694	22004	58188	HIN100472	34065	70249	SAU800516			
9943	46127	BAN106697	22005	58189	HIN100475	34066	70250	SAU800554			
9944	46128	BAN106725	22006	58190	HIN100480	34067	70251	SAU800563			
9945	46129	BAN106730	22007	58191	HIN100482	34068	70252	SAU800569			
9946	46130	BAN106733	22008	58192	HIN100483	34069	70253	SAU800598			
9947	46131	BAN106734	22009	58193	HIN100489	34070	70254	SAU800609			
9948	46132	BAN106751	22010	58194	HIN100490	34071	70255	SAU800615			
9949	46133	BAN106780	22011	58195	HIN100493	34072	70256	SAU800629			
9950	46134	BAN106781	22012	58196	HIN100494	34073	70257	SAU800636			

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
9951	46135	BAN106784	22013	58197	HIN100495	34074	70258	SAU800647
9952	46136	BAN106794	22014	58198	HIN100496	34075	70259	SAU800664
9953	46137	BAN106801	22015	58199	HIN100500	34076	70260	SAU800669
9954	46138	BAN106809	22016	58200	HIN100503	34077	70261	SAU800673
9955	46139	BAN106815	22017	58201	HIN100504	34078	70262	SAU800702
9956	46140	BAN106826	22018	58202	HIN100506	34079	70263	SAU800711
9957	46141	BAN106829	22019	58203	HIN100508	34080	70264	SAU800721
9958	46142	BAN106833	22020	58204	HIN100509	34081	70265	SAU800723
9959	46143	BAN106840	22021	58205	HIN100510	34082	70266	SAU800730
9960	46144	BAN106848	22022	58206	HIN100511	34083	70267	SAU800731
9961	46145	BAN106854	22023	58207	HIN100512	34084	70268	SAU800747
9962	46146	BAN106855	22024	58208	HIN100515	34085	70269	SAU800754
9963	46147	BAN106857	22025	58209	HIN100516	34086	70270	SAU800769
9964	46148	BAN106862	22026	58210	HIN100518	34087	70271	SAU800773
9965	46149	BAN106879	22027	58211	HIN100520	34088	70272	SAU800812
9966	46150	BAN106892	22028	58212	HIN100522	34089	70273	SAU800816
9967	46151	BAN106894	22029	58213	HIN100523	34090	70274	SAU800840
9968	46152	BAN106903	22030	58214	HIN100524	34091	70275	SAU800864
9969	46153	BAN106908	22031	58215	HIN100525	34092	70276	SAU800898
9970	46154	BAN106917	22032	58216	HIN100526	34093	70277	SAU800923
9971	46155	BAN106936	22033	58217	HIN100527	34094	70278	SAU800941
9972	46156	BAN106937	22034	58218	HIN100528	34095	70279	SAU800957
9973	46157	BAN106938	22035	58219	HIN100532	34096	70280	SAU800958
9974	46158	BAN106939	22036	58220	HIN100537	34097	70281	SAU800959
9975	46159	BAN106956	22037	58221	HIN100541	34098	70282	SAU800960
9976	46160	BAN106975	22038	58222	HIN100546	34099	70283	SAU800983
9977	46161	BAN106990	22039	58223	HIN100547	34100	70284	SAU800988
9978	46162	BAN106991	22040	58224	HIN100551	34101	70285	SAU800993
9979	46163	BAN106993	22041	58225	HIN100558	34102	70286	SAU801006
9980	46164	BAN106994	22042	58226	HIN100559	34103	70287	SAU801009
9981	46165	BAN107002	22043	58227	HIN100560	34104	70288	SAU801024
9982	46166	BAN107008	22044	58228	HIN100561	34105	70289	SAU801057
9983	46167	BAN107021	22045	58229	HIN100562	34106	70290	SAU801069
9984	46168	BAN107027	22046	58230	HIN100573	34107	70291	SAU801086
9985	46169	BAN107039	22047	58231	HIN100574	34108	70292	SAU801102
9986	46170	BAN107042	22048	58232	HIN100575	34109	70293	SAU801112
9987	46171	BAN107044	22049	58233	HIN100576	34110	70294	SAU801129
9988	46172	BAN107063	22050	58234	HIN100578	34111	70295	SAU801137
9989	46173	BAN107067	22051	58235	HIN100579	34112	70296	SAU801149
9990	46174	BAN107071	22052	58236	HIN100585	34113	70297	SAU801163
9991	46175	BAN107073	22053	58237	HIN100586	34114	70298	SAU801166
9992	46176	BAN107077	22054	58238	HIN100590	34115	70299	SAU801167
9993	46177	BAN107078	22055	58239	HIN100592	34116	70300	SAU801168
9994	46178	BAN107079	22056	58240	HIN100600	34117	70301	SAU801169
9995	46179	BAN107089	22057	58241	HIN100605	34118	70302	SAU801171
9996	46180	BAN107094	22058	58242	HIN100606	34119	70303	SAU801178
9997	46181	BAN107104	22059	58243	HIN100608	34120	70304	SAU801202
9998	46182	BAN107106	22060	58244	HIN100613	34121	70305	SAU801203
9999	46183	BAN107108	22061	58245	HIN100615	34122	70306	SAU801207
10000	46184	BAN107109	22062	58246	HIN100618	34123	70307	SAU801217
10001	46185	BAN107114	22063	58247	HIN100620	34124	70308	SAU801224
10002	46186	BAN107115	22064	58248	HIN100621	34125	70309	SAU801239
10003	46187	BAN107130	22065	58249	HIN100622	34126	70310	SAU801244
10004	46188	BAN107161	22066	58250	HIN100623	34127	70311	SAU801250
10005	46189	BAN107168	22067	58251	HIN100626	34128	70312	SAU801258

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10006	46190	BAN107191	22068	58252	HIN100627	34129	70313	SAU801266
10007	46191	BAN107227	22069	58253	HIN100630	34130	70314	SAU801271
10008	46192	BAN107229	22070	58254	HIN100636	34131	70315	SAU801272
10009	46193	BAN107236	22071	58255	HIN100639	34132	70316	SAU801276
10010	46194	BAN107240	22072	58256	HIN100648	34133	70317	SAU801283
10011	46195	BAN107248	22073	58257	HIN100652	34134	70318	SAU801285
10012	46196	BAN107249	22074	58258	HIN100653	34135	70319	SAU801288
10013	46197	BAN107250	22075	58259	HIN100657	34136	70320	SAU801300
10014	46198	BAN107253	22076	58260	HIN100663	34137	70321	SAU801327
10015	46199	BAN107259	22077	58261	HIN100664	34138	70322	SAU801334
10016	46200	BAN107265	22078	58262	HIN100668	34139	70323	SAU801335
10017	46201	BAN107278	22079	58263	HIN100671	34140	70324	SAU801336
10018	46202	BAN107282	22080	58264	HIN100672	34141	70325	SAU801337
10019	46203	BAN107286	22081	58265	HIN100677	34142	70326	SAU801345
10020	46204	BAN107300	22082	58266	HIN100686	34143	70327	SAU801369
10021	46205	BAN107304	22083	58267	HIN100694	34144	70328	SAU801370
10022	46206	BAN107308	22084	58268	HIN100695	34145	70329	SAU801372
10023	46207	BAN107309	22085	58269	HIN100696	34146	70330	SAU801386
10024	46208	BAN107311	22086	58270	HIN100697	34147	70331	SAU801397
10025	46209	BAN107312	22087	58271	HIN100708	34148	70332	SAU801414
10026	46210	BAN107313	22088	58272	HIN100709	34149	70333	SAU801417
10027	46211	BAN107319	22089	58273	HIN100714	34150	70334	SAU801418
10028	46212	BAN107328	22090	58274	HIN100718	34151	70335	SAU801427
10029	46213	BAN107331	22091	58275	HIN100720	34152	70336	SAU801431
10030	46214	BAN107335	22092	58276	HIN100721	34153	70337	SAU801432
10031	46215	BAN107336	22093	58277	HIN100724	34154	70338	SAU801437
10032	46216	BAN107337	22094	58278	HIN100732	34155	70339	SAU801442
10033	46217	BAN107339	22095	58279	HIN100734	34156	70340	SAU801446
10034	46218	BAN107347	22096	58280	HIN100735	34157	70341	SAU801454
10035	46219	BAN107351	22097	58281	HIN100738	34158	70342	SAU801474
10036	46220	BAN107352	22098	58282	HIN100746	34159	70343	SAU801478
10037	46221	BAN107365	22099	58283	HIN100748	34160	70344	SAU801486
10038	46222	BAN107378	22100	58284	HIN100751	34161	70345	SAU801488
10039	46223	BAN107403	22101	58285	HIN100756	34162	70346	SAU801497
10040	46224	BAN107404	22102	58286	HIN100757	34163	70347	SAU801524
10041	46225	BAN107407	22103	58287	HIN100758	34164	70348	SAU801527
10042	46226	BAN107431	22104	58288	HIN100759	34165	70349	SAU801531
10043	46227	BAN107436	22105	58289	HIN100760	34166	70350	SAU801534
10044	46228	BAN107456	22106	58290	HIN100761	34167	70351	SAU801535
10045	46229	BAN107463	22107	58291	HIN100762	34168	70352	SAU801550
10046	46230	BAN107464	22108	58292	HIN100763	34169	70353	SAU801561
10047	46231	BAN107465	22109	58293	HIN100764	34170	70354	SAU801562
10048	46232	BAN107471	22110	58294	HIN100765	34171	70355	SAU801563
10049	46233	BAN107483	22111	58295	HIN100766	34172	70356	SAU801569
10050	46234	BAN107492	22112	58296	HIN100768	34173	70357	SAU801575
10051	46235	BAN107508	22113	58297	HIN100769	34174	70358	SAU801577
10052	46236	BAN107521	22114	58298	HIN100770	34175	70359	SAU801586
10053	46237	BAN107541	22115	58299	HIN100771	34176	70360	SAU801612
10054	46238	BAN107549	22116	58300	HIN100772	34177	70361	SAU801627
10055	46239	BAN107556	22117	58301	HIN100773	34178	70362	SAU801634
10056	46240	BAN107557	22118	58302	HIN100774	34179	70363	SAU801639
10057	46241	BAN107558	22119	58303	HIN100775	34180	70364	SAU801640
10058	46242	BAN107562	22120	58304	HIN100776	34181	70365	SAU801660
10059	46243	BAN107563	22121	58305	HIN100777	34182	70366	SAU801672
10060	46244	BAN107568	22122	58306	HIN100778	34183	70367	SAU801674

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10061	46245	BAN107569	22123	58307	HIN100779	34184	70368	SAU801689
10062	46246	BAN107590	22124	58308	HIN100780	34185	70369	SAU801690
10063	46247	BAN107601	22125	58309	HIN100781	34186	70370	SAU801709
10064	46248	BAN107620	22126	58310	HIN100782	34187	70371	SAU801728
10065	46249	BAN107627	22127	58311	HIN100783	34188	70372	SAU801737
10066	46250	BAN107647	22128	58312	HIN100784	34189	70373	SAU801767
10067	46251	BAN107672	22129	58313	HIN100788	34190	70374	SAU801773
10068	46252	BAN107676	22130	58314	HIN100789	34191	70375	SAU801804
10069	46253	BAN107686	22131	58315	HIN100790	34192	70376	SAU801807
10070	46254	BAN107688	22132	58316	HIN100791	34193	70377	SAU801808
10071	46255	BAN107697	22133	58317	HIN100792	34194	70378	SAU801809
10072	46256	BAN107699	22134	58318	HIN100793	34195	70379	SAU801810
10073	46257	BAN107706	22135	58319	HIN100794	34196	70380	SAU801811
10074	46258	BAN107715	22136	58320	HIN100803	34197	70381	SAU801813
10075	46259	BAN107719	22137	58321	HIN100806	34198	70382	SAU801820
10076	46260	BAN107720	22138	58322	HIN100807	34199	70383	SAU801855
10077	46261	BAN107731	22139	58323	HIN100811	34200	70384	SAU801857
10078	46262	BAN107739	22140	58324	HIN100816	34201	70385	SAU801866
10079	46263	BAN107751	22141	58325	HIN100817	34202	70386	SAU801878
10080	46264	BAN107763	22142	58326	HIN100833	34203	70387	SAU801881
10081	46265	BAN107764	22143	58327	HIN100836	34204	70388	SAU801983
10082	46266	BAN107772	22144	58328	HIN100838	34205	70389	SAU802005
10083	46267	BAN107794	22145	58329	HIN100839	34206	70390	SAU802011
10084	46268	BAN107811	22146	58330	HIN100842	34207	70391	SAU802029
10085	46269	BAN107818	22147	58331	HIN100844	34208	70392	SAU802042
10086	46270	BAN107819	22148	58332	HIN100845	34209	70393	SAU802053
10087	46271	BAN107825	22149	58333	HIN100846	34210	70394	SAU802068
10088	46272	BAN107827	22150	58334	HIN100848	34211	70395	SAU802073
10089	46273	BAN107854	22151	58335	HIN100853	34212	70396	SAU802078
10090	46274	BAN107861	22152	58336	HIN100855	34213	70397	SAU802108
10091	46275	BAN107867	22153	58337	HIN100857	34214	70398	SAU802117
10092	46276	BAN107872	22154	58338	HIN100859	34215	70399	SAU802127
10093	46277	BAN107884	22155	58339	HIN100860	34216	70400	SAU802143
10094	46278	BAN107886	22156	58340	HIN100861	34217	70401	SAU802164
10095	46279	BAN107893	22157	58341	HIN100864	34218	70402	SAU802175
10096	46280	BAN107901	22158	58342	HIN100869	34219	70403	SAU802209
10097	46281	BAN107904	22159	58343	HIN100874	34220	70404	SAU802219
10098	46282	BAN107918	22160	58344	HIN100875	34221	70405	SAU802220
10099	46283	BAN107919	22161	58345	HIN100879	34222	70406	SAU802242
10100	46284	BAN107924	22162	58346	HIN100884	34223	70407	SAU802268
10101	46285	BAN107953	22163	58347	HIN100888	34224	70408	SAU802277
10102	46286	BAN107954	22164	58348	HIN100892	34225	70409	SAU802323
10103	46287	BAN107958	22165	58349	HIN100893	34226	70410	SAU802352
10104	46288	BAN107961	22166	58350	HIN100894	34227	70411	SAU802353
10105	46289	BAN107984	22167	58351	HIN100898	34228	70412	SAU802355
10106	46290	BAN107998	22168	58352	HIN100899	34229	70413	SAU802387
10107	46291	BAN108009	22169	58353	HIN100900	34230	70414	SAU802388
10108	46292	BAN108010	22170	58354	HIN100903	34231	70415	SAU802392
10109	46293	BAN108013	22171	58355	HIN100906	34232	70416	SAU802394
10110	46294	BAN108027	22172	58356	HIN100907	34233	70417	SAU802420
10111	46295	BAN108033	22173	58357	HIN100911	34234	70418	SAU802421
10112	46296	BAN108041	22174	58358	HIN100912	34235	70419	SAU802486
10113	46297	BAN108047	22175	58359	HIN100923	34236	70420	SAU802500
10114	46298	BAN108080	22176	58360	HIN100925	34237	70421	SAU802512
10115	46299	BAN108085	22177	58361	HIN100930	34238	70422	SAU802525

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10116	46300	BAN108099	22178	58362	HIN100931	34239	70423	SAU802530
10117	46301	BAN108104	22179	58363	HIN100932	34240	70424	SAU802534
10118	46302	BAN108106	22180	58364	HIN100939	34241	70425	SAU802560
10119	46303	BAN108111	22181	58365	HIN100942	34242	70426	SAU802603
10120	46304	BAN108119	22182	58366	HIN100943	34243	70427	SAU802611
10121	46305	BAN108120	22183	58367	HIN100944	34244	70428	SAU802630
10122	46306	BAN108126	22184	58368	HIN100950	34245	70429	SAU802633
10123	46307	BAN108132	22185	58369	HIN100951	34246	70430	SAU802647
10124	46308	BAN108150	22186	58370	HIN100955	34247	70431	SAU802666
10125	46309	BAN108152	22187	58371	HIN100957	34248	70432	SAU802679
10126	46310	BAN108159	22188	58372	HIN100958	34249	70433	SAU802687
10127	46311	BAN108168	22189	58373	HIN100960	34250	70434	SAU802712
10128	46312	BAN108173	22190	58374	HIN100962	34251	70435	SEP100077
10129	46313	BAN108174	22191	58375	HIN100963	34252	70436	SEP100083
10130	46314	BAN108180	22192	58376	HIN100969	34253	70437	SEP100151
10131	46315	BAN108182	22193	58377	HIN100971	34254	70438	SEP100200
10132	46316	BAN108186	22194	58378	HIN100973	34255	70439	SEP100265
10133	46317	BAN108189	22195	58379	HIN100974	34256	70440	SEP100270
10134	46318	BAN108205	22196	58380	HIN100979	34257	70441	SEP100573
10135	46319	BAN108206	22197	58381	HIN100980	34258	70442	SEP100701
10136	46320	BAN108214	22198	58382	HIN100982	34259	70443	SEP100718
10137	46321	BAN108234	22199	58383	HIN100983	34260	70444	SEP100719
10138	46322	BAN108237	22200	58384	HIN100985	34261	70445	SEP100915
10139	46323	BAN108238	22201	58385	HIN100992	34262	70446	SEP100950
10140	46324	BAN108248	22202	58386	HIN100998	34263	70447	SEP101087
10141	46325	BAN108260	22203	58387	HIN101001	34264	70448	SEP101306
10142	46326	BAN108269	22204	58388	HIN101002	34265	70449	SEP102450
10143	46327	BAN108271	22205	58389	HIN101007	34266	70450	SEP102493
10144	46328	BAN108277	22206	58390	HIN101025	34267	70451	SEP102632
10145	46329	BAN108284	22207	58391	HIN101030	34268	70452	SEP102883
10146	46330	BAN108287	22208	58392	HIN101036	34269	70453	SEP103164
10147	46331	BAN108290	22209	58393	HIN101037	34270	70454	SEP200018
10148	46332	BAN108298	22210	58394	HIN101039	34271	70455	SEP200020
10149	46333	BAN108299	22211	58395	HIN101041	34272	70456	SEP200029
10150	46334	BAN108345	22212	58396	HIN101042	34273	70457	SEP200039
10151	46335	BAN108361	22213	58397	HIN101051	34274	70458	SEP200040
10152	46336	BAN108367	22214	58398	HIN101052	34275	70459	SEP200043
10153	46337	BAN108403	22215	58399	HIN101054	34276	70460	SEP200047
10154	46338	BAN108409	22216	58400	HIN101057	34277	70461	SEP200050
10155	46339	BAN108415	22217	58401	HIN101066	34278	70462	SEP200052
10156	46340	BAN108420	22218	58402	HIN101070	34279	70463	SEP200058
10157	46341	BAN108425	22219	58403	HIN101074	34280	70464	SEP200059
10158	46342	BAN108451	22220	58404	HIN101075	34281	70465	SEP200060
10159	46343	BAN108458	22221	58405	HIN101077	34282	70466	SEP200061
10160	46344	BAN108463	22222	58406	HIN101078	34283	70467	SEP200070
10161	46345	BAN108468	22223	58407	HIN101084	34284	70468	SEP200071
10162	46346	BAN108476	22224	58408	HIN101085	34285	70469	SEP200072
10163	46347	BAN108506	22225	58409	HIN101086	34286	70470	SEP200076
10164	46348	BAN108518	22226	58410	HIN101089	34287	70471	SEP200080
10165	46349	BAN108519	22227	58411	HIN101094	34288	70472	SEP200082
10166	46350	BAN108522	22228	58412	HIN101098	34289	70473	SEP200083
10167	46351	BAN108525	22229	58413	HIN101100	34290	70474	SEP200084
10168	46352	BAN108531	22230	58414	HIN101103	34291	70475	SEP200085
10169	46353	BAN108534	22231	58415	HIN101104	34292	70476	SEP200090
10170	46354	BAN108536	22232	58416	HIN101106	34293	70477	SEP200091

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10171	46355	BAN108547	22233	58417	HIN101107	34294	70478	SEP200094
10172	46356	BAN108570	22234	58418	HIN101108	34295	70479	SEP200097
10173	46357	BAN108573	22235	58419	HIN101109	34296	70480	SEP200102
10174	46358	BAN108575	22236	58420	HIN101110	34297	70481	SEP200110
10175	46359	BAN108590	22237	58421	HIN101111	34298	70482	SEP200115
10176	46360	BAN108591	22238	58422	HIN101112	34299	70483	SEP200118
10177	46361	BAN108593	22239	58423	HIN101113	34300	70484	SEP200129
10178	46362	BAN108606	22240	58424	HIN101114	34301	70485	SEP200137
10179	46363	BAN108618	22241	58425	HIN101115	34302	70486	SEP200138
10180	46364	BAN108621	22242	58426	HIN101116	34303	70487	SEP200140
10181	46365	BAN108626	22243	58427	HIN101117	34304	70488	SEP200141
10182	46366	BAN108627	22244	58428	HIN101118	34305	70489	SEP200142
10183	46367	BAN108651	22245	58429	HIN101120	34306	70490	SEP200143
10184	46368	BAN108663	22246	58430	HIN101125	34307	70491	SEP200145
10185	46369	BAN108675	22247	58431	HIN101129	34308	70492	SEP200154
10186	46370	BAN108683	22248	58432	HIN101143	34309	70493	SEP200156
10187	46371	BAN108686	22249	58433	HIN101146	34310	70494	SEP200161
10188	46372	BAN108690	22250	58434	HIN101151	34311	70495	SEP200162
10189	46373	BAN108696	22251	58435	HIN101152	34312	70496	SEP200164
10190	46374	BAN108705	22252	58436	HIN101157	34313	70497	SEP200165
10191	46375	BAN108710	22253	58437	HIN101160	34314	70498	SEP200166
10192	46376	BAN108719	22254	58438	HIN101161	34315	70499	SEP200167
10193	46377	BAN108721	22255	58439	HIN101163	34316	70500	SEP200169
10194	46378	BAN108734	22256	58440	HIN101166	34317	70501	SEP200171
10195	46379	BAN108740	22257	58441	HIN101170	34318	70502	SEP200173
10196	46380	BAN108744	22258	58442	HIN101172	34319	70503	SEP200175
10197	46381	BAN108754	22259	58443	HIN101176	34320	70504	SEP200178
10198	46382	BAN108755	22260	58444	HIN101178	34321	70505	SEP200180
10199	46383	BAN108766	22261	58445	HIN101181	34322	70506	SEP200182
10200	46384	BAN108774	22262	58446	HIN101184	34323	70507	SEP200184
10201	46385	BAN108783	22263	58447	HIN101185	34324	70508	SEP200187
10202	46386	BAN108789	22264	58448	HIN101186	34325	70509	SEP200190
10203	46387	BAN108790	22265	58449	HIN101188	34326	70510	SEP200198
10204	46388	BAN108797	22266	58450	HIN101191	34327	70511	SEP200200
10205	46389	BAN108822	22267	58451	HIN101192	34328	70512	SEP200202
10206	46390	BAN108834	22268	58452	HIN101200	34329	70513	SEP200203
10207	46391	BAN108836	22269	58453	HIN101201	34330	70514	SEP200204
10208	46392	BAN108855	22270	58454	HIN101203	34331	70515	SEP200206
10209	46393	BAN108859	22271	58455	HIN101204	34332	70516	SEP200209
10210	46394	BAN108863	22272	58456	HIN101209	34333	70517	SEP200214
10211	46395	BAN108866	22273	58457	HIN101211	34334	70518	SEP200215
10212	46396	BAN108869	22274	58458	HIN101214	34335	70519	SEP200217
10213	46397	BAN108871	22275	58459	HIN101215	34336	70520	SEP200218
10214	46398	BAN108883	22276	58460	HIN101218	34337	70521	SEP200222
10215	46399	BAN108891	22277	58461	HIN101224	34338	70522	SEP200228
10216	46400	BAN108902	22278	58462	HIN101225	34339	70523	SEP200229
10217	46401	BAN108908	22279	58463	HIN101226	34340	70524	SEP200232
10218	46402	BAN108913	22280	58464	HIN101230	34341	70525	SEP200233
10219	46403	BAN108921	22281	58465	HIN101231	34342	70526	SEP200234
10220	46404	BAN108929	22282	58466	HIN101232	34343	70527	SEP200235
10221	46405	BAN108931	22283	58467	HIN101236	34344	70528	SEP200238
10222	46406	BAN108934	22284	58468	HIN101245	34345	70529	SEP200240
10223	46407	BAN108968	22285	58469	HIN101249	34346	70530	SEP200241
10224	46408	BAN108978	22286	58470	HIN101251	34347	70531	SEP200242
10225	46409	BAN108997	22287	58471	HIN101252	34348	70532	SEP200243

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10226	46410	BAN109007	22288	58472	HIN101253	34349	70533	SEP200245
10227	46411	BAN109013	22289	58473	HIN101254	34350	70534	SEP200247
10228	46412	BAN109015	22290	58474	HIN101255	34351	70535	SEP200249
10229	46413	BAN109023	22291	58475	HIN101257	34352	70536	SEP200251
10230	46414	BAN109036	22292	58476	HIN101266	34353	70537	SEP200253
10231	46415	BAN109040	22293	58477	HIN101268	34354	70538	SEP200255
10232	46416	BAN109049	22294	58478	HIN101269	34355	70539	SEP200257
10233	46417	BAN109052	22295	58479	HIN101270	34356	70540	SEP200260
10234	46418	BAN109057	22296	58480	HIN101271	34357	70541	SEP200261
10235	46419	BAN109062	22297	58481	HIN101274	34358	70542	SEP200262
10236	46420	BAN109065	22298	58482	HIN101277	34359	70543	SEP200263
10237	46421	BAN109070	22299	58483	HIN101278	34360	70544	SEP200265
10238	46422	BAN109082	22300	58484	HIN101284	34361	70545	SEP200267
10239	46423	BAN109088	22301	58485	HIN101285	34362	70546	SEP200269
10240	46424	BAN109098	22302	58486	HIN101286	34363	70547	SEP200270
10241	46425	BAN109120	22303	58487	HIN101288	34364	70548	SEP200271
10242	46426	BAN109134	22304	58488	HIN101290	34365	70549	SEP200272
10243	46427	BAN109136	22305	58489	HIN101294	34366	70550	SEP200273
10244	46428	BAN109157	22306	58490	HIN101297	34367	70551	SEP200275
10245	46429	BAN109166	22307	58491	HIN101301	34368	70552	SEP200277
10246	46430	BAN109192	22308	58492	HIN101302	34369	70553	SEP200278
10247	46431	BAN109213	22309	58493	HIN101303	34370	70554	SEP200280
10248	46432	BAN109223	22310	58494	HIN101309	34371	70555	SEP200281
10249	46433	BAN109230	22311	58495	HIN101310	34372	70556	SEP200282
10250	46434	BAN109236	22312	58496	HIN101314	34373	70557	SEP200287
10251	46435	BAN109240	22313	58497	HIN101315	34374	70558	SEP200295
10252	46436	BAN109246	22314	58498	HIN101320	34375	70559	SEP200301
10253	46437	BAN109247	22315	58499	HIN101323	34376	70560	SEP200319
10254	46438	BAN109279	22316	58500	HIN101324	34377	70561	SEP200320
10255	46439	BAN109296	22317	58501	HIN101328	34378	70562	SEP200335
10256	46440	BAN109301	22318	58502	HIN101331	34379	70563	SEP200338
10257	46441	BAN109344	22319	58503	HIN101333	34380	70564	SEP200340
10258	46442	BAN109347	22320	58504	HIN101334	34381	70565	SEP200343
10259	46443	BAN109348	22321	58505	HIN101341	34382	70566	SEP200346
10260	46444	BAN109357	22322	58506	HIN101344	34383	70567	SEP200347
10261	46445	BAN109365	22323	58507	HIN101348	34384	70568	SEP200350
10262	46446	BAN109367	22324	58508	HIN101356	34385	70569	SEP200351
10263	46447	BAN109383	22325	58509	HIN101357	34386	70570	SEP200352
10264	46448	BAN109395	22326	58510	HIN101359	34387	70571	SEP200353
10265	46449	BAN109397	22327	58511	HIN101365	34388	70572	SEP200354
10266	46450	BAN109399	22328	58512	HIN101368	34389	70573	SEP200360
10267	46451	BAN109409	22329	58513	HIN101397	34390	70574	SEP200371
10268	46452	BAN109416	22330	58514	HIN101399	34391	70575	SEP200372
10269	46453	BAN109424	22331	58515	HIN101407	34392	70576	SEP200374
10270	46454	BAN109456	22332	58516	HIN101408	34393	70577	SEP200375
10271	46455	BAN109468	22333	58517	HIN101410	34394	70578	SEP200377
10272	46456	BAN109471	22334	58518	HIN101411	34395	70579	SEP200384
10273	46457	BAN109475	22335	58519	HIN101412	34396	70580	SEP200388
10274	46458	BAN109506	22336	58520	HIN101413	34397	70581	SEP200390
10275	46459	BAN109519	22337	58521	HIN101415	34398	70582	SEP200396
10276	46460	BAN109521	22338	58522	HIN101417	34399	70583	SEP200407
10277	46461	BAN109524	22339	58523	HIN101418	34400	70584	SEP200408
10278	46462	BAN109528	22340	58524	HIN101420	34401	70585	SEP200415
10279	46463	BAN109532	22341	58525	HIN101431	34402	70586	SEP200416
10280	46464	BAN109533	22342	58526	HIN101432	34403	70587	SEP200417

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10281	46465	BAN109536	22343	58527	HIN101433	34404	70588	SEP200419
10282	46466	BAN109542	22344	58528	HIN101435	34405	70589	SEP200424
10283	46467	BAN109546	22345	58529	HIN101436	34406	70590	SEP200430
10284	46468	BAN109552	22346	58530	HIN101437	34407	70591	SEP200432
10285	46469	BAN109554	22347	58531	HIN101440	34408	70592	SEP200433
10286	46470	BAN109556	22348	58532	HIN101441	34409	70593	SEP200437
10287	46471	BAN109558	22349	58533	HIN101495	34410	70594	SEP200448
10288	46472	BAN109561	22350	58534	HIN101502	34411	70595	SEP200449
10289	46473	BAN109563	22351	58535	HIN101506	34412	70596	SEP200452
10290	46474	BAN109567	22352	58536	HIN101513	34413	70597	SEP200453
10291	46475	BAN109585	22353	58537	HIN101522	34414	70598	SEP200454
10292	46476	BAN109593	22354	58538	HIN101523	34415	70599	SEP200455
10293	46477	BAN109607	22355	58539	HIN101524	34416	70600	SEP200458
10294	46478	BAN109609	22356	58540	HIN101526	34417	70601	SEP200460
10295	46479	BAN109620	22357	58541	HIN101528	34418	70602	SEP200461
10296	46480	BAN109623	22358	58542	HIN101530	34419	70603	SEP200462
10297	46481	BAN109630	22359	58543	HIN101541	34420	70604	SEP200463
10298	46482	BAN109652	22360	58544	HIN101542	34421	70605	SEP200466
10299	46483	BAN109661	22361	58545	HIN101543	34422	70606	SEP200469
10300	46484	BAN109684	22362	58546	HIN101544	34423	70607	SEP200471
10301	46485	BAN109694	22363	58547	HIN101550	34424	70608	SEP200474
10302	46486	BAN109705	22364	58548	HIN101551	34425	70609	SEP200476
10303	46487	BAN109710	22365	58549	HIN101552	34426	70610	SEP200477
10304	46488	BAN109714	22366	58550	HIN101555	34427	70611	SEP200478
10305	46489	BAN109722	22367	58551	HIN101557	34428	70612	SEP200480
10306	46490	BAN109723	22368	58552	HIN101559	34429	70613	SEP200481
10307	46491	BAN109731	22369	58553	HIN101564	34430	70614	SEP200482
10308	46492	BAN109743	22370	58554	HIN101565	34431	70615	SEP200487
10309	46493	BAN109756	22371	58555	HIN101567	34432	70616	SEP200493
10310	46494	BAN109777	22372	58556	HIN101571	34433	70617	SEP200495
10311	46495	BAN109779	22373	58557	HIN101573	34434	70618	SEP200496
10312	46496	BAN109784	22374	58558	HIN101576	34435	70619	SEP200503
10313	46497	BAN109792	22375	58559	HIN101577	34436	70620	SEP200506
10314	46498	BAN109795	22376	58560	HIN101580	34437	70621	SEP200507
10315	46499	BAN109810	22377	58561	HIN101581	34438	70622	SEP200509
10316	46500	BAN109818	22378	58562	HIN101592	34439	70623	SEP200517
10317	46501	BAN109819	22379	58563	HIN101594	34440	70624	SEP200520
10318	46502	BAN109820	22380	58564	HIN101596	34441	70625	SEP200524
10319	46503	BAN109841	22381	58565	HIN101599	34442	70626	SEP200530
10320	46504	BAN109844	22382	58566	HIN101600	34443	70627	SEP200536
10321	46505	BAN109853	22383	58567	HIN101601	34444	70628	SEP200539
10322	46506	BAN109858	22384	58568	HIN101608	34445	70629	SEP200540
10323	46507	BAN109871	22385	58569	HIN101610	34446	70630	SEP200546
10324	46508	BAN109872	22386	58570	HIN101612	34447	70631	SEP200547
10325	46509	BAN109879	22387	58571	HIN101613	34448	70632	SEP200550
10326	46510	BAN109892	22388	58572	HIN101614	34449	70633	SEP200552
10327	46511	BAN109893	22389	58573	HIN101619	34450	70634	SEP200553
10328	46512	BAN109894	22390	58574	HIN101624	34451	70635	SEP200554
10329	46513	BAN109895	22391	58575	HIN101625	34452	70636	SEP200558
10330	46514	BAN109911	22392	58576	HIN101627	34453	70637	SEP200560
10331	46515	BAN109916	22393	58577	HIN101641	34454	70638	SEP200563
10332	46516	BAN109931	22394	58578	HIN101642	34455	70639	SEP200564
10333	46517	BAN109939	22395	58579	HIN101645	34456	70640	SEP200567
10334	46518	BAN109941	22396	58580	HIN101656	34457	70641	SEP200570
10335	46519	BAN109955	22397	58581	HIN101658	34458	70642	SEP200580

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10336	46520	BAN109973	22398	58582	HIN101661	34459	70643	SEP200584
10337	46521	BAN109977	22399	58583	HIN101663	34460	70644	SEP200585
10338	46522	BAN109986	22400	58584	HIN101670	34461	70645	SEP200589
10339	46523	BAN109993	22401	58585	HIN101677	34462	70646	SEP200591
10340	46524	BAN109997	22402	58586	HIN101678	34463	70647	SEP200593
10341	46525	BAN110014	22403	58587	HIN101681	34464	70648	SEP200597
10342	46526	BAN110020	22404	58588	HIN101683	34465	70649	SEP200598
10343	46527	BAN110028	22405	58589	HIN101684	34466	70650	SEP200616
10344	46528	BAN110029	22406	58590	HIN101685	34467	70651	SEP200625
10345	46529	BAN110033	22407	58591	HIN101686	34468	70652	SEP200626
10346	46530	BAN110043	22408	58592	HIN101690	34469	70653	SEP200630
10347	46531	BAN110046	22409	58593	HIN101694	34470	70654	SEP200633
10348	46532	BAN110051	22410	58594	HIN101697	34471	70655	SEP200634
10349	46533	BAN110054	22411	58595	HIN101698	34472	70656	SEP200654
10350	46534	BAN110060	22412	58596	HIN101699	34473	70657	SEP200656
10351	46535	BAN110062	22413	58597	HIN101704	34474	70658	SEP200670
10352	46536	BAN110074	22414	58598	HIN101705	34475	70659	SEP200677
10353	46537	BAN110077	22415	58599	HIN101707	34476	70660	SEP200678
10354	46538	BAN110083	22416	58600	HPY100001	34477	70661	SEP200699
10355	46539	BAN110084	22417	58601	HPY100002	34478	70662	SEP200711
10356	46540	BAN110089	22418	58602	HPY100003	34479	70663	SEP200713
10357	46541	BAN110095	22419	58603	HPY100009	34480	70664	SEP200718
10358	46542	BAN110101	22420	58604	HPY100011	34481	70665	SEP200723
10359	46543	BAN110110	22421	58605	HPY100025	34482	70666	SEP200736
10360	46544	BAN110134	22422	58606	HPY100026	34483	70667	SEP200740
10361	46545	BAN110141	22423	58607	HPY100034	34484	70668	SEP200741
10362	46546	BAN110149	22424	58608	HPY100055	34485	70669	SEP200742
10363	46547	BAN110157	22425	58609	HPY100066	34486	70670	SEP200743
10364	46548	BAN110170	22426	58610	HPY100067	34487	70671	SEP200752
10365	46549	BAN110172	22427	58611	HPY100070	34488	70672	SEP200756
10366	46550	BAN110178	22428	58612	HPY100073	34489	70673	SEP200765
10367	46551	BAN110183	22429	58613	HPY100074	34490	70674	SEP200771
10368	46552	BAN110202	22430	58614	HPY100075	34491	70675	SEP200773
10369	46553	BAN110205	22431	58615	HPY100077	34492	70676	SEP200775
10370	46554	BAN110216	22432	58616	HPY100081	34493	70677	SEP200778
10371	46555	BAN110218	22433	58617	HPY100082	34494	70678	SEP200779
10372	46556	BAN110223	22434	58618	HPY100084	34495	70679	SEP200782
10373	46557	BAN110237	22435	58619	HPY100086	34496	70680	SEP200784
10374	46558	BAN110238	22436	58620	HPY100087	34497	70681	SEP200785
10375	46559	BAN110258	22437	58621	HPY100088	34498	70682	SEP200786
10376	46560	BAN110260	22438	58622	HPY100096	34499	70683	SEP200794
10377	46561	BAN110262	22439	58623	HPY100107	34500	70684	SEP200795
10378	46562	BAN110265	22440	58624	HPY100114	34501	70685	SEP200797
10379	46563	BAN110276	22441	58625	HPY100119	34502	70686	SEP200799
10380	46564	BAN110285	22442	58626	HPY100121	34503	70687	SEP200800
10381	46565	BAN110288	22443	58627	HPY100122	34504	70688	SEP200801
10382	46566	BAN110295	22444	58628	HPY100123	34505	70689	SEP200802
10383	46567	BAN110296	22445	58629	HPY100124	34506	70690	SEP200804
10384	46568	BAN110308	22446	58630	HPY100130	34507	70691	SEP200806
10385	46569	BAN110321	22447	58631	HPY100131	34508	70692	SEP200811
10386	46570	BAN110325	22448	58632	HPY100137	34509	70693	SEP200812
10387	46571	BAN110337	22449	58633	HPY100141	34510	70694	SEP200816
10388	46572	BAN110343	22450	58634	HPY100150	34511	70695	SEP200819
10389	46573	BAN110377	22451	58635	HPY100151	34512	70696	SEP200820
10390	46574	BAN110379	22452	58636	HPY100160	34513	70697	SEP200821

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10391	46575	BAN110382	22453	58637	HPY100166	34514	70698	SEP200827
10392	46576	BAN110383	22454	58638	HPY100168	34515	70699	SEP200828
10393	46577	BAN110387	22455	58639	HPY100169	34516	70700	SEP200833
10394	46578	BAN110414	22456	58640	HPY100173	34517	70701	SEP200834
10395	46579	BAN110434	22457	58641	HPY100177	34518	70702	SEP200837
10396	46580	BAN110444	22458	58642	HPY100179	34519	70703	SEP200853
10397	46581	BAN110448	22459	58643	HPY100180	34520	70704	SEP200862
10398	46582	BAN110449	22460	58644	HPY100189	34521	70705	SEP200863
10399	46583	BAN110462	22461	58645	HPY100192	34522	70706	SEP200864
10400	46584	BAN110463	22462	58646	HPY100193	34523	70707	SEP200869
10401	46585	BAN110475	22463	58647	HPY100194	34524	70708	SEP200875
10402	46586	BAN110476	22464	58648	HPY100199	34525	70709	SEP200876
10403	46587	BAN110486	22465	58649	HPY100206	34526	70710	SEP200880
10404	46588	BAN110503	22466	58650	HPY100209	34527	70711	SEP200881
10405	46589	BAN110506	22467	58651	HPY100211	34528	70712	SEP200882
10406	46590	BAN110511	22468	58652	HPY100217	34529	70713	SEP200883
10407	46591	BAN110516	22469	58653	HPY100219	34530	70714	SEP200884
10408	46592	BAN110518	22470	58654	HPY100224	34531	70715	SEP200890
10409	46593	BAN110520	22471	58655	HPY100225	34532	70716	SEP200891
10410	46594	BAN110524	22472	58656	HPY100233	34533	70717	SEP200892
10411	46595	BAN110534	22473	58657	HPY100234	34534	70718	SEP200893
10412	46596	BAN110545	22474	58658	HPY100235	34535	70719	SEP200894
10413	46597	BAN110554	22475	58659	HPY100236	34536	70720	SEP200895
10414	46598	BAN110560	22476	58660	HPY100239	34537	70721	SEP200896
10415	46599	BAN110580	22477	58661	HPY100240	34538	70722	SEP200897
10416	46600	BAN110583	22478	58662	HPY100243	34539	70723	SEP200898
10417	46601	BAN110595	22479	58663	HPY100246	34540	70724	SEP200899
10418	46602	BAN110605	22480	58664	HPY100251	34541	70725	SEP200901
10419	46603	BAN110606	22481	58665	HPY100255	34542	70726	SEP200905
10420	46604	BAN110615	22482	58666	HPY100260	34543	70727	SEP200907
10421	46605	BAN110623	22483	58667	HPY100262	34544	70728	SEP200908
10422	46606	BAN110626	22484	58668	HPY100263	34545	70729	SEP200910
10423	46607	BAN110629	22485	58669	HPY100273	34546	70730	SEP200913
10424	46608	BAN110631	22486	58670	HPY100275	34547	70731	SEP200915
10425	46609	BAN110636	22487	58671	HPY100276	34548	70732	SEP200917
10426	46610	BAN110637	22488	58672	HPY100277	34549	70733	SEP200921
10427	46611	BAN110638	22489	58673	HPY100285	34550	70734	SEP200922
10428	46612	BAN110643	22490	58674	HPY100289	34551	70735	SEP200923
10429	46613	BAN110648	22491	58675	HPY100292	34552	70736	SEP200927
10430	46614	BAN110650	22492	58676	HPY100293	34553	70737	SEP200928
10431	46615	BAN110655	22493	58677	HPY100294	34554	70738	SEP200934
10432	46616	BAN110656	22494	58678	HPY100295	34555	70739	SEP200935
10433	46617	BAN110657	22495	58679	HPY100297	34556	70740	SEP200938
10434	46618	BAN110675	22496	58680	HPY100298	34557	70741	SEP200942
10435	46619	BAN110678	22497	58681	HPY100299	34558	70742	SEP200943
10436	46620	BAN110693	22498	58682	HPY100308	34559	70743	SEP200945
10437	46621	BAN110697	22499	58683	HPY100313	34560	70744	SEP200955
10438	46622	BAN110701	22500	58684	HPY100315	34561	70745	SEP200967
10439	46623	BAN110703	22501	58685	HPY100318	34562	70746	SEP200968
10440	46624	BAN110707	22502	58686	HPY100325	34563	70747	SEP200972
10441	46625	BAN110711	22503	58687	HPY100326	34564	70748	SEP200975
10442	46626	BAN110714	22504	58688	HPY100344	34565	70749	SEP200983
10443	46627	BAN110716	22505	58689	HPY100345	34566	70750	SEP200985
10444	46628	BAN110721	22506	58690	HPY100346	34567	70751	SEP200986
10445	46629	BAN110744	22507	58691	HPY100348	34568	70752	SEP200989

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10446	46630	BAN110745	22508	58692	HPY100357	34569	70753	SEP200992
10447	46631	BAN110750	22509	58693	HPY100360	34570	70754	SEP200994
10448	46632	BAN110758	22510	58694	HPY100361	34571	70755	SEP200997
10449	46633	BAN110763	22511	58695	HPY100366	34572	70756	SEP200998
10450	46634	BAN110772	22512	58696	HPY100367	34573	70757	SEP201002
10451	46635	BAN110775	22513	58697	HPY100369	34574	70758	SEP201006
10452	46636	BAN110789	22514	58698	HPY100370	34575	70759	SEP201007
10453	46637	BAN110794	22515	58699	HPY100374	34576	70760	SEP201009
10454	46638	BAN110803	22516	58700	HPY100376	34577	70761	SEP201014
10455	46639	BAN110804	22517	58701	HPY100377	34578	70762	SEP201015
10456	46640	BAN110806	22518	58702	HPY100387	34579	70763	SEP201017
10457	46641	BAN110808	22519	58703	HPY100391	34580	70764	SEP201018
10458	46642	BAN110814	22520	58704	HPY100395	34581	70765	SEP201019
10459	46643	BAN110824	22521	58705	HPY100398	34582	70766	SEP201022
10460	46644	BAN110840	22522	58706	HPY100399	34583	70767	SEP201025
10461	46645	BAN110842	22523	58707	HPY100405	34584	70768	SEP201028
10462	46646	BAN110850	22524	58708	HPY100411	34585	70769	SEP201029
10463	46647	BAN110867	22525	58709	HPY100413	34586	70770	SEP201035
10464	46648	BAN110875	22526	58710	HPY100417	34587	70771	SEP201036
10465	46649	BAN110882	22527	58711	HPY100434	34588	70772	SEP201038
10466	46650	BAN110893	22528	58712	HPY100469	34589	70773	SEP201048
10467	46651	BAN110897	22529	58713	HPY100472	34590	70774	SEP201054
10468	46652	BAN110904	22530	58714	HPY100476	34591	70775	SEP201068
10469	46653	BAN110909	22531	58715	HPY100481	34592	70776	SEP201069
10470	46654	BAN110913	22532	58716	HPY100485	34593	70777	SEP201082
10471	46655	BAN110916	22533	58717	HPY100486	34594	70778	SEP201086
10472	46656	BAN110918	22534	58718	HPY100488	34595	70779	SEP201087
10473	46657	BAN110931	22535	58719	HPY100489	34596	70780	SEP201090
10474	46658	BAN110932	22536	58720	HPY100493	34597	70781	SEP201092
10475	46659	BAN110948	22537	58721	HPY100495	34598	70782	SEP201093
10476	46660	BAN110951	22538	58722	HPY100496	34599	70783	SEP201095
10477	46661	BAN110972	22539	58723	HPY100503	34600	70784	SEP201102
10478	46662	BAN110976	22540	58724	HPY100505	34601	70785	SEP201112
10479	46663	BAN110986	22541	58725	HPY100507	34602	70786	SEP201114
10480	46664	BAN111001	22542	58726	HPY100509	34603	70787	SEP201115
10481	46665	BAN111016	22543	58727	HPY100510	34604	70788	SEP201117
10482	46666	BAN111019	22544	58728	HPY100512	34605	70789	SEP201118
10483	46667	BAN111025	22545	58729	HPY100521	34606	70790	SEP201119
10484	46668	BAN111056	22546	58730	HPY100542	34607	70791	SEP201122
10485	46669	BAN111058	22547	58731	HPY100543	34608	70792	SEP201129
10486	46670	BAN111062	22548	58732	HPY100544	34609	70793	SEP201130
10487	46671	BAN111073	22549	58733	HPY100545	34610	70794	SEP201132
10488	46672	BAN111079	22550	58734	HPY100550	34611	70795	SEP201139
10489	46673	BAN111095	22551	58735	HPY100551	34612	70796	SEP201146
10490	46674	BAN111103	22552	58736	HPY100552	34613	70797	SEP201147
10491	46675	BAN111105	22553	58737	HPY100554	34614	70798	SEP201149
10492	46676	BAN111111	22554	58738	HPY100555	34615	70799	SEP201157
10493	46677	BAN111116	22555	58739	HPY100562	34616	70800	SEP201160
10494	46678	BAN111119	22556	58740	HPY100563	34617	70801	SEP201161
10495	46679	BAN111145	22557	58741	HPY100567	34618	70802	SEP201163
10496	46680	BAN111154	22558	58742	HPY100569	34619	70803	SEP201165
10497	46681	BAN111196	22559	58743	HPY100571	34620	70804	SEP201166
10498	46682	BAN111201	22560	58744	HPY100574	34621	70805	SEP201168
10499	46683	BAN111216	22561	58745	HPY100575	34622	70806	SEP201169
10500	46684	BAN111220	22562	58746	HPY100585	34623	70807	SEP201171

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10501	46685	BAN111224	22563	58747	HPY100590	34624	70808	SEP201177
10502	46686	BAN111284	22564	58748	HPY100600	34625	70809	SEP201179
10503	46687	BAN111288	22565	58749	HPY100602	34626	70810	SEP201187
10504	46688	BAN111291	22566	58750	HPY100603	34627	70811	SEP201188
10505	46689	BAN111310	22567	58751	HPY100608	34628	70812	SEP201193
10506	46690	BAN111315	22568	58752	HPY100610	34629	70813	SEP201194
10507	46691	BAN111327	22569	58753	HPY100611	34630	70814	SEP201196
10508	46692	BAN111328	22570	58754	HPY100613	34631	70815	SEP201198
10509	46693	BAN111331	22571	58755	HPY100615	34632	70816	SEP201213
10510	46694	BAN111337	22572	58756	HPY100617	34633	70817	SEP201215
10511	46695	BAN111342	22573	58757	HPY100632	34634	70818	SEP201224
10512	46696	BAN111346	22574	58758	HPY100638	34635	70819	SEP201225
10513	46697	BAN111357	22575	58759	HPY100640	34636	70820	SEP201242
10514	46698	BAN111360	22576	58760	HPY100644	34637	70821	SEP201243
10515	46699	BAN111361	22577	58761	HPY100650	34638	70822	SEP201244
10516	46700	BAN111369	22578	58762	HPY100655	34639	70823	SEP201246
10517	46701	BAN111381	22579	58763	HPY100658	34640	70824	SEP201248
10518	46702	BAN111398	22580	58764	HPY100661	34641	70825	SEP201249
10519	46703	BAN111400	22581	58765	HPY100667	34642	70826	SEP201250
10520	46704	BAN111416	22582	58766	HPY100668	34643	70827	SEP201253
10521	46705	BAN111422	22583	58767	HPY100671	34644	70828	SEP201255
10522	46706	BAN111428	22584	58768	HPY100672	34645	70829	SEP201258
10523	46707	BAN111435	22585	58769	HPY100675	34646	70830	SEP201273
10524	46708	BAN111440	22586	58770	HPY100677	34647	70831	SEP201275
10525	46709	BAN111462	22587	58771	HPY100681	34648	70832	SEP201276
10526	46710	BAN111465	22588	58772	HPY100684	34649	70833	SEP201278
10527	46711	BAN111478	22589	58773	HPY100691	34650	70834	SEP201279
10528	46712	BAN111488	22590	58774	HPY100692	34651	70835	SEP201282
10529	46713	BAN111495	22591	58775	HPY100696	34652	70836	SEP201284
10530	46714	BAN111498	22592	58776	HPY100698	34653	70837	SEP201288
10531	46715	BAN111500	22593	58777	HPY100700	34654	70838	SEP201289
10532	46716	BAN111504	22594	58778	HPY100705	34655	70839	SEP201290
10533	46717	BAN111510	22595	58779	HPY100707	34656	70840	SEP201291
10534	46718	BAN111521	22596	58780	HPY100715	34657	70841	SEP201292
10535	46719	BAN111533	22597	58781	HPY100716	34658	70842	SEP201293
10536	46720	BAN111549	22598	58782	HPY100722	34659	70843	SEP201294
10537	46721	BAN111561	22599	58783	HPY100724	34660	70844	SEP201300
10538	46722	BAN111566	22600	58784	HPY100726	34661	70845	SEP201303
10539	46723	BAN111570	22601	58785	HPY100727	34662	70846	SEP201305
10540	46724	BAN111580	22602	58786	HPY100728	34663	70847	SEP201306
10541	46725	BAN111582	22603	58787	HPY100730	34664	70848	SEP201307
10542	46726	BAN111588	22604	58788	HPY100747	34665	70849	SEP201308
10543	46727	BAN111598	22605	58789	HPY100748	34666	70850	SEP201309
10544	46728	BAN111603	22606	58790	HPY100750	34667	70851	SEP201313
10545	46729	BAN111609	22607	58791	HPY100755	34668	70852	SEP201315
10546	46730	BAN111612	22608	58792	HPY100757	34669	70853	SEP201321
10547	46731	BAN111615	22609	58793	HPY100759	34670	70854	SEP201326
10548	46732	BAN111626	22610	58794	HPY100760	34671	70855	SEP201328
10549	46733	BAN111627	22611	58795	HPY100761	34672	70856	SEP201329
10550	46734	BAN111644	22612	58796	HPY100762	34673	70857	SEP201331
10551	46735	BAN111652	22613	58797	HPY100764	34674	70858	SEP201333
10552	46736	BAN111654	22614	58798	HPY100766	34675	70859	SEP201335
10553	46737	BAN111655	22615	58799	HPY100773	34676	70860	SEP201337
10554	46738	BAN111672	22616	58800	HPY100774	34677	70861	SEP201338
10555	46739	BAN111688	22617	58801	HPY100786	34678	70862	SEP201339

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10556	46740	BAN111690	22618	58802	HPY100791	34679	70863	SEP201342
10557	46741	BAN111697	22619	58803	HPY100794	34680	70864	SEP201343
10558	46742	BAN111700	22620	58804	HPY100795	34681	70865	SEP201344
10559	46743	BAN111707	22621	58805	HPY100801	34682	70866	SEP201349
10560	46744	BAN111708	22622	58806	HPY100815	34683	70867	SEP201350
10561	46745	BAN111727	22623	58807	HPY100817	34684	70868	SEP201352
10562	46746	BAN111729	22624	58808	HPY100821	34685	70869	SEP201353
10563	46747	BAN111738	22625	58809	HPY100822	34686	70870	SEP201354
10564	46748	BAN111761	22626	58810	HPY100826	34687	70871	SEP201355
10565	46749	BAN111762	22627	58811	HPY100827	34688	70872	SEP201361
10566	46750	BAN111763	22628	58812	HPY100830	34689	70873	SEP201365
10567	46751	BAN111797	22629	58813	HPY100832	34690	70874	SEP201371
10568	46752	BAN111817	22630	58814	HPY100833	34691	70875	SEP201376
10569	46753	BAN111819	22631	58815	HPY100837	34692	70876	SEP201381
10570	46754	BAN111821	22632	58816	HPY100838	34693	70877	SEP201383
10571	46755	BAN111824	22633	58817	HPY100840	34694	70878	SEP201386
10572	46756	BAN111826	22634	58818	HPY100841	34695	70879	SEP201389
10573	46757	BAN111842	22635	58819	HPY100844	34696	70880	SEP201393
10574	46758	BAN111848	22636	58820	HPY100845	34697	70881	SEP201395
10575	46759	BAN111855	22637	58821	HPY100848	34698	70882	SEP201396
10576	46760	BAN111872	22638	58822	HPY100850	34699	70883	SEP201402
10577	46761	BAN111886	22639	58823	HPY100854	34700	70884	SEP201405
10578	46762	BAN111894	22640	58824	HPY100862	34701	70885	SEP201407
10579	46763	BAN111897	22641	58825	HPY100871	34702	70886	SEP201410
10580	46764	BAN111901	22642	58826	HPY100872	34703	70887	SEP201411
10581	46765	BAN111908	22643	58827	HPY100874	34704	70888	SEP201413
10582	46766	BAN111913	22644	58828	HPY100875	34705	70889	SEP201414
10583	46767	BAN111921	22645	58829	HPY100877	34706	70890	SEP201415
10584	46768	BAN111934	22646	58830	HPY100884	34707	70891	SEP201416
10585	46769	BAN111944	22647	58831	HPY100891	34708	70892	SEP201419
10586	46770	BAN111952	22648	58832	HPY100897	34709	70893	SEP201423
10587	46771	BAN111963	22649	58833	HPY100903	34710	70894	SEP201425
10588	46772	BAN111975	22650	58834	HPY100906	34711	70895	SEP201439
10589	46773	BAN111977	22651	58835	HPY100909	34712	70896	SEP201442
10590	46774	BAN111991	22652	58836	HPY100913	34713	70897	SEP201443
10591	46775	BAN111994	22653	58837	HPY100925	34714	70898	SEP201450
10592	46776	BAN111995	22654	58838	HPY100933	34715	70899	SEP201451
10593	46777	BAN111998	22655	58839	HPY100934	34716	70900	SEP201453
10594	46778	BAN111999	22656	58840	HPY100944	34717	70901	SEP201458
10595	46779	BAN112001	22657	58841	HPY100945	34718	70902	SEP201466
10596	46780	BAN112004	22658	58842	HPY100946	34719	70903	SEP201467
10597	46781	BAN112005	22659	58843	HPY100954	34720	70904	SEP201470
10598	46782	BAN112009	22660	58844	HPY100956	34721	70905	SEP201474
10599	46783	BAN112016	22661	58845	HPY100960	34722	70906	SEP201475
10600	46784	BAN112022	22662	58846	HPY100962	34723	70907	SEP201476
10601	46785	BAN112023	22663	58847	HPY100963	34724	70908	SEP201477
10602	46786	BAN112031	22664	58848	HPY100965	34725	70909	SEP201478
10603	46787	BAN112038	22665	58849	HPY100973	34726	70910	SEP201479
10604	46788	BAN112042	22666	58850	HPY100979	34727	70911	SEP201491
10605	46789	BAN112047	22667	58851	HPY100981	34728	70912	SEP201495
10606	46790	BAN112052	22668	58852	HPY100992	34729	70913	SEP201501
10607	46791	BAN112058	22669	58853	HPY100995	34730	70914	SEP201507
10608	46792	BAN112078	22670	58854	HPY100999	34731	70915	SEP201510
10609	46793	BAN112079	22671	58855	HPY101000	34732	70916	SEP201511
10610	46794	BAN112085	22672	58856	HPY101002	34733	70917	SEP201521

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10611	46795	BAN112086	22673	58857	HPY101003	34734	70918	SEP201523
10612	46796	BAN112091	22674	58858	HPY101007	34735	70919	SEP201525
10613	46797	BAN112108	22675	58859	HPY101009	34736	70920	SEP201527
10614	46798	BAN112117	22676	58860	HPY101019	34737	70921	SEP201528
10615	46799	BAN112122	22677	58861	HPY101022	34738	70922	SEP201529
10616	46800	BAN112131	22678	58862	HPY101023	34739	70923	SEP201530
10617	46801	BAN112134	22679	58863	HPY101028	34740	70924	SEP201531
10618	46802	BAN112137	22680	58864	HPY101031	34741	70925	SEP201532
10619	46803	BAN112139	22681	58865	HPY101033	34742	70926	SEP201533
10620	46804	BAN112147	22682	58866	HPY101035	34743	70927	SEP201534
10621	46805	BAN112148	22683	58867	HPY101041	34744	70928	SEP201537
10622	46806	BAN112149	22684	58868	HPY101045	34745	70929	SEP201538
10623	46807	BAN112161	22685	58869	HPY101046	34746	70930	SEP201540
10624	46808	BAN112162	22686	58870	HPY101050	34747	70931	SEP201542
10625	46809	BAN112173	22687	58871	HPY101052	34748	70932	SEP201543
10626	46810	BAN112177	22688	58872	HPY101055	34749	70933	SEP201545
10627	46811	BAN112183	22689	58873	HPY101056	34750	70934	SEP201546
10628	46812	BAN112193	22690	58874	HPY101065	34751	70935	SEP201549
10629	46813	BAN112197	22691	58875	HPY101070	34752	70936	SEP201550
10630	46814	BAN112207	22692	58876	HPY101071	34753	70937	SEP201551
10631	46815	BAN112212	22693	58877	HPY101073	34754	70938	SEP201552
10632	46816	BAN112213	22694	58878	HPY101078	34755	70939	SEP201553
10633	46817	BAN112238	22695	58879	HPY101084	34756	70940	SEP201554
10634	46818	BAN112240	22696	58880	HPY101087	34757	70941	SEP201556
10635	46819	BAN112243	22697	58881	HPY101095	34758	70942	SEP201557
10636	46820	BAN112245	22698	58882	HPY101101	34759	70943	SEP201559
10637	46821	BAN112247	22699	58883	HPY101117	34760	70944	SEP201562
10638	46822	BAN112255	22700	58884	HPY101122	34761	70945	SEP201564
10639	46823	BAN112258	22701	58885	HPY101130	34762	70946	SEP201565
10640	46824	BAN112261	22702	58886	HPY101131	34763	70947	SEP201566
10641	46825	BAN112264	22703	58887	HPY101132	34764	70948	SEP201567
10642	46826	BAN112271	22704	58888	HPY101133	34765	70949	SEP201568
10643	46827	BAN112277	22705	58889	HPY101134	34766	70950	SEP201569
10644	46828	BAN112286	22706	58890	HPY101135	34767	70951	SEP201571
10645	46829	BAN112289	22707	58891	HPY101136	34768	70952	SEP201572
10646	46830	BAN112300	22708	58892	HPY101138	34769	70953	SEP201575
10647	46831	BAN112322	22709	58893	HPY101140	34770	70954	SEP201577
10648	46832	BAN112326	22710	58894	HPY101142	34771	70955	SEP201578
10649	46833	BAN112348	22711	58895	HPY101149	34772	70956	SEP201579
10650	46834	BAN112350	22712	58896	HPY101152	34773	70957	SEP201580
10651	46835	BAN112352	22713	58897	HPY101155	34774	70958	SEP201582
10652	46836	BAN112358	22714	58898	HPY101157	34775	70959	SEP201583
10653	46837	BAN112360	22715	58899	HPY101160	34776	70960	SEP201584
10654	46838	BAN112374	22716	58900	HPY101168	34777	70961	SEP201586
10655	46839	BAN112388	22717	58901	HPY101172	34778	70962	SEP201588
10656	46840	BAN112395	22718	58902	HPY101173	34779	70963	SEP201589
10657	46841	BAN112396	22719	58903	HPY101176	34780	70964	SEP201590
10658	46842	BAN112410	22720	58904	HPY101178	34781	70965	SEP201595
10659	46843	BAN112425	22721	58905	HPY101179	34782	70966	SEP201596
10660	46844	BAN112430	22722	58906	HPY101180	34783	70967	SEP201597
10661	46845	BAN112435	22723	58907	HPY101181	34784	70968	SEP201603
10662	46846	BAN112439	22724	58908	HPY101182	34785	70969	SEP201605
10663	46847	BAN112441	22725	58909	HPY101183	34786	70970	SEP201609
10664	46848	BAN112470	22726	58910	HPY101184	34787	70971	SEP201610
10665	46849	BAN112473	22727	58911	HPY101185	34788	70972	SEP201611

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10666	46850	BAN112485	22728	58912	HPY101186	34789	70973	SEP201612
10667	46851	BAN112488	22729	58913	HPY101187	34790	70974	SEP201613
10668	46852	BAN112499	22730	58914	HPY101188	34791	70975	SEP201625
10669	46853	BAN112503	22731	58915	HPY101193	34792	70976	SEP201629
10670	46854	BAN112513	22732	58916	HPY101195	34793	70977	SEP201630
10671	46855	BAN112515	22733	58917	HPY101196	34794	70978	SEP201634
10672	46856	BAN112527	22734	58918	HPY101203	34795	70979	SEP201637
10673	46857	BAN112531	22735	58919	HPY101204	34796	70980	SEP201642
10674	46858	BAN112546	22736	58920	HPY101212	34797	70981	SEP201643
10675	46859	BAN112551	22737	58921	HPY101215	34798	70982	SEP201644
10676	46860	BAN112555	22738	58922	HPY101217	34799	70983	SEP201645
10677	46861	BAN112567	22739	58923	HPY101220	34800	70984	SEP201646
10678	46862	BAN112573	22740	58924	HPY101224	34801	70985	SEP201649
10679	46863	BAN112576	22741	58925	HPY101226	34802	70986	SEP201650
10680	46864	BAN112582	22742	58926	HPY101227	34803	70987	SEP201652
10681	46865	BAN112588	22743	58927	HPY101228	34804	70988	SEP201659
10682	46866	BAN112613	22744	58928	HPY101229	34805	70989	SEP201661
10683	46867	BAN112629	22745	58929	HPY101230	34806	70990	SEP201662
10684	46868	BAN112641	22746	58930	HPY101232	34807	70991	SEP201663
10685	46869	BAN112647	22747	58931	HPY101235	34808	70992	SEP201664
10686	46870	BAN112649	22748	58932	HPY101236	34809	70993	SEP201665
10687	46871	BAN112655	22749	58933	HPY101239	34810	70994	SEP201666
10688	46872	BAN112662	22750	58934	HPY101240	34811	70995	SEP201670
10689	46873	BAN112667	22751	58935	HPY101249	34812	70996	SEP201680
10690	46874	BAN112678	22752	58936	HPY101254	34813	70997	SEP201682
10691	46875	BAN112682	22753	58937	HPY101257	34814	70998	SEP201683
10692	46876	BAN112689	22754	58938	HPY101261	34815	70999	SEP201686
10693	46877	BAN112693	22755	58939	HPY101262	34816	71000	SEP201687
10694	46878	BAN112697	22756	58940	HPY101268	34817	71001	SEP201692
10695	46879	BAN112706	22757	58941	HPY101269	34818	71002	SEP201696
10696	46880	BAN112727	22758	58942	HPY101274	34819	71003	SEP201702
10697	46881	BAN112732	22759	58943	HPY101275	34820	71004	SEP201703
10698	46882	BAN112735	22760	58944	HPY101276	34821	71005	SEP201704
10699	46883	BAN112738	22761	58945	HPY101277	34822	71006	SEP201705
10700	46884	BAN112775	22762	58946	HPY101278	34823	71007	SEP201707
10701	46885	BAN112783	22763	58947	HPY101279	34824	71008	SEP201723
10702	46886	BAN112793	22764	58948	HPY101280	34825	71009	SEP201729
10703	46887	BAN112796	22765	58949	HPY101282	34826	71010	SEP201736
10704	46888	BAN112806	22766	58950	HPY101283	34827	71011	SEP201738
10705	46889	BAN112818	22767	58951	HPY101284	34828	71012	SEP201745
10706	46890	BAN112822	22768	58952	HPY101285	34829	71013	SEP201747
10707	46891	BAN112839	22769	58953	HPY101286	34830	71014	SEP201749
10708	46892	BAN112876	22770	58954	HPY101287	34831	71015	SEP201754
10709	46893	BAN112878	22771	58955	HPY101288	34832	71016	SEP201760
10710	46894	BAN112898	22772	58956	HPY101289	34833	71017	SEP201763
10711	46895	BAN112909	22773	58957	HPY101290	34834	71018	SEP201764
10712	46896	BAN112918	22774	58958	HPY101291	34835	71019	SEP201765
10713	46897	BAN112958	22775	58959	HPY101292	34836	71020	SEP201767
10714	46898	BAN112977	22776	58960	HPY101293	34837	71021	SEP201771
10715	46899	BAN112993	22777	58961	HPY101294	34838	71022	SEP201776
10716	46900	BAN113007	22778	58962	HPY101295	34839	71023	SEP201777
10717	46901	BAN113008	22779	58963	HPY101296	34840	71024	SEP201779
10718	46902	BAN113011	22780	58964	HPY101297	34841	71025	SEP201781
10719	46903	BAN113013	22781	58965	HPY101298	34842	71026	SEP201787
10720	46904	BAN113034	22782	58966	HPY101299	34843	71027	SEP201789

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10721	46905	BAN113042	22783	58967	HPY101300	34844	71028	SEP201790
10722	46906	BAN113044	22784	58968	HPY101301	34845	71029	SEP201791
10723	46907	BAN113055	22785	58969	HPY101302	34846	71030	SEP201795
10724	46908	BAN113068	22786	58970	HPY101305	34847	71031	SEP201796
10725	46909	BAN113076	22787	58971	HPY101317	34848	71032	SEP201798
10726	46910	BAN113086	22788	58972	HPY101323	34849	71033	SEP201799
10727	46911	BAN113089	22789	58973	HPY101327	34850	71034	SEP201800
10728	46912	BAN113091	22790	58974	HPY101328	34851	71035	SEP201804
10729	46913	BAN113092	22791	58975	HPY101330	34852	71036	SEP201810
10730	46914	BAN113112	22792	58976	HPY101333	34853	71037	SEP201811
10731	46915	BAN113122	22793	58977	HPY101335	34854	71038	SEP201812
10732	46916	BAN113128	22794	58978	HPY101343	34855	71039	SEP201815
10733	46917	BAN113143	22795	58979	HPY101345	34856	71040	SEP201817
10734	46918	BAN113145	22796	58980	HPY101353	34857	71041	SEP201822
10735	46919	BAN113148	22797	58981	HPY101354	34858	71042	SEP201823
10736	46920	BAN113149	22798	58982	HPY101356	34859	71043	SEP201824
10737	46921	BAN113157	22799	58983	HPY101359	34860	71044	SEP201825
10738	46922	BAN113185	22800	58984	HPY101363	34861	71045	SEP201826
10739	46923	BAN113187	22801	58985	HPY101372	34862	71046	SEP201832
10740	46924	BAN113191	22802	58986	HPY101374	34863	71047	SEP201833
10741	46925	BAN113193	22803	58987	HPY101378	34864	71048	SEP201834
10742	46926	BAN113200	22804	58988	HPY101380	34865	71049	SEP201836
10743	46927	BAN113204	22805	58989	HPY101386	34866	71050	SEP201838
10744	46928	BAN113211	22806	58990	HPY101397	34867	71051	SEP201839
10745	46929	BAN113216	22807	58991	HPY101401	34868	71052	SEP201842
10746	46930	BAN113226	22808	58992	HPY101402	34869	71053	SEP201844
10747	46931	BAN113237	22809	58993	HPY101406	34870	71054	SEP201845
10748	46932	BAN113242	22810	58994	HPY101409	34871	71055	SEP201846
10749	46933	BAN113250	22811	58995	HPY101410	34872	71056	SEP201847
10750	46934	BAN113253	22812	58996	HPY101411	34873	71057	SEP201849
10751	46935	BAN113265	22813	58997	HPY101413	34874	71058	SEP201850
10752	46936	BAN113266	22814	58998	HPY101421	34875	71059	SEP201852
10753	46937	BAN113279	22815	58999	HPY101423	34876	71060	SEP201853
10754	46938	BAN113282	22816	59000	HPY101426	34877	71061	SEP201854
10755	46939	BAN113283	22817	59001	HPY101427	34878	71062	SEP201855
10756	46940	BAN113289	22818	59002	HPY101429	34879	71063	SEP201857
10757	46941	BAN113291	22819	59003	HPY101431	34880	71064	SEP201858
10758	46942	BAN113297	22820	59004	HPY101438	34881	71065	SEP201859
10759	46943	BAN113298	22821	59005	HPY101439	34882	71066	SEP201860
10760	46944	BAN113302	22822	59006	HPY101447	34883	71067	SEP201862
10761	46945	BAN113310	22823	59007	HPY101449	34884	71068	SEP201863
10762	46946	BAN113311	22824	59008	HPY101453	34885	71069	SEP201864
10763	46947	BAN113324	22825	59009	HPY101457	34886	71070	SEP201867
10764	46948	BAN113334	22826	59010	HPY101459	34887	71071	SEP201868
10765	46949	BAN113336	22827	59011	HPY101462	34888	71072	SEP201869
10766	46950	BAN113350	22828	59012	HPY101469	34889	71073	SEP201870
10767	46951	BAN113353	22829	59013	HPY101470	34890	71074	SEP201872
10768	46952	BAN113355	22830	59014	HPY101473	34891	71075	SEP201873
10769	46953	BAN113356	22831	59015	HPY101474	34892	71076	SEP201874
10770	46954	BAN113370	22832	59016	HPY101475	34893	71077	SEP201876
10771	46955	BAN113400	22833	59017	HPY101484	34894	71078	SEP201879
10772	46956	BAN113404	22834	59018	HPY101488	34895	71079	SEP201880
10773	46957	BAN113414	22835	59019	HPY101493	34896	71080	SEP201881
10774	46958	BAN113417	22836	59020	HPY101500	34897	71081	SEP201882
10775	46959	BAN113421	22837	59021	HPY101507	34898	71082	SEP201883

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10776	46960	BAN113435	22838	59022	HPY101510	34899	71083	SEP201884
10777	46961	BAN113438	22839	59023	HPY101512	34900	71084	SEP201885
10778	46962	BAN113444	22840	59024	HPY101518	34901	71085	SEP201886
10779	46963	BAN113454	22841	59025	HPY101520	34902	71086	SEP201887
10780	46964	BAN113463	22842	59026	HPY101521	34903	71087	SEP201889
10781	46965	BAN113487	22843	59027	HPY101524	34904	71088	SEP201891
10782	46966	BAN113492	22844	59028	HPY101531	34905	71089	SEP201892
10783	46967	BAN113496	22845	59029	HPY101532	34906	71090	SEP201893
10784	46968	BAN113498	22846	59030	HPY101533	34907	71091	SEP201895
10785	46969	BAN113506	22847	59031	HPY101537	34908	71092	SEP201899
10786	46970	BAN113536	22848	59032	HPY101538	34909	71093	SEP201900
10787	46971	BAN113545	22849	59033	HPY101540	34910	71094	SEP201901
10788	46972	BAN113546	22850	59034	HPY101541	34911	71095	SEP201902
10789	46973	BAN113548	22851	59035	HPY101550	34912	71096	SEP201903
10790	46974	BAN113552	22852	59036	HPY101551	34913	71097	SEP201904
10791	46975	BAN113556	22853	59037	HPY101554	34914	71098	SEP201905
10792	46976	BAN113559	22854	59038	HPY101558	34915	71099	SEP201908
10793	46977	BAN113573	22855	59039	HPY101561	34916	71100	SEP201909
10794	46978	BAN113579	22856	59040	HPY200007	34917	71101	SEP201910
10795	46979	BAN113590	22857	59041	HPY200074	34918	71102	SEP201911
10796	46980	BAN113598	22858	59042	HPY200273	34919	71103	SEP201912
10797	46981	BAN113611	22859	59043	HPY200297	34920	71104	SEP201913
10798	46982	BAN113613	22860	59044	HPY200316	34921	71105	SEP201914
10799	46983	BAN113633	22861	59045	HPY200518	34922	71106	SEP201915
10800	46984	BAN113643	22862	59046	HPY200552	34923	71107	SEP201917
10801	46985	BAN113646	22863	59047	HPY200581	34924	71108	SEP201920
10802	46986	BAN113683	22864	59048	HPY200593	34925	71109	SEP201922
10803	46987	BAN113686	22865	59049	HPY200724	34926	71110	SEP201923
10804	46988	BAN113695	22866	59050	HPY200804	34927	71111	SEP201925
10805	46989	BAN113702	22867	59051	HPY200813	34928	71112	SEP201928
10806	46990	BAN113715	22868	59052	HPY200815	34929	71113	SEP201929
10807	46991	BAN113732	22869	59053	HPY200837	34930	71114	SEP201938
10808	46992	BAN113740	22870	59054	HPY200852	34931	71115	SEP201942
10809	46993	BAN113748	22871	59055	HPY200933	34932	71116	SEP201943
10810	46994	BBU100005	22872	59056	HPY201061	34933	71117	SEP201959
10811	46995	BBU100010	22873	59057	HPY201191	34934	71118	SEP201962
10812	46996	BBU100021	22874	59058	HPY201193	34935	71119	SEP201964
10813	46997	BBU100032	22875	59059	HPY201197	34936	71120	SEP201965
10814	46998	BBU100033	22876	59060	HPY201308	34937	71121	SEP201966
10815	46999	BBU100037	22877	59061	HPY201384	34938	71122	SEP201967
10816	47000	BBU100045	22878	59062	HPY201414	34939	71123	SEP201970
10817	47001	BBU100046	22879	59063	KPN100079	34940	71124	SEP201972
10818	47002	BBU100050	22880	59064	KPN100130	34941	71125	SEP201974
10819	47003	BBU100056	22881	59065	KPN100140	34942	71126	SEP201976
10820	47004	BBU100057	22882	59066	KPN100143	34943	71127	SEP201977
10821	47005	BBU100059	22883	59067	KPN100639	34944	71128	SEP201983
10822	47006	BBU100068	22884	59068	KPN101222	34945	71129	SEP201985
10823	47007	BBU100071	22885	59069	KPN101258	34946	71130	SEP201988
10824	47008	BBU100074	22886	59070	KPN101346	34947	71131	SEP201990
10825	47009	BBU100076	22887	59071	KPN101409	34948	71132	SEP201991
10826	47010	BBU100078	22888	59072	KPN101512	34949	71133	SEP201993
10827	47011	BBU100098	22889	59073	KPN101788	34950	71134	SEP201995
10828	47012	BBU100100	22890	59074	KPN102440	34951	71135	SEP201999
10829	47013	BBU100101	22891	59075	KPN102504	34952	71136	SEP202002
10830	47014	BBU100104	22892	59076	KPN102754	34953	71137	SEP202003

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10831	47015	BBU100107	22893	59077	KPN102930	34954	71138	SEP202004
10832	47016	BBU100109	22894	59078	KPN103323	34955	71139	SEP202011
10833	47017	BBU100111	22895	59079	KPN103684	34956	71140	SEP202012
10834	47018	BBU100112	22896	59080	KPN103715	34957	71141	SEP202013
10835	47019	BBU100113	22897	59081	KPN103820	34958	71142	SEP202016
10836	47020	BBU100114	22898	59082	KPN103829	34959	71143	SEP202018
10837	47021	BBU100117	22899	59083	KPN103840	34960	71144	SEP202019
10838	47022	BBU100119	22900	59084	KPN103912	34961	71145	SEP202022
10839	47023	BBU100120	22901	59085	KPN104217	34962	71146	SEP202024
10840	47024	BBU100121	22902	59086	KPN104425	34963	71147	SEP202027
10841	47025	BBU100122	22903	59087	KPN104635	34964	71148	SEP202028
10842	47026	BBU100126	22904	59088	KPN104728	34965	71149	SEP202029
10843	47027	BBU100127	22905	59089	KPN104916	34966	71150	SEP202030
10844	47028	BBU100128	22906	59090	KPN105149	34967	71151	SEP202031
10845	47029	BBU100130	22907	59091	KPN105172	34968	71152	SEP202032
10846	47030	BBU100134	22908	59092	KPN105357	34969	71153	SEP202034
10847	47031	BBU100135	22909	59093	KPN105518	34970	71154	SEP202038
10848	47032	BBU100139	22910	59094	KPN105705	34971	71155	SEP202039
10849	47033	BBU100140	22911	59095	KPN106090	34972	71156	SEP202045
10850	47034	BBU100150	22912	59096	KPN106560	34973	71157	SEP202046
10851	47035	BBU100151	22913	59097	KPN107267	34974	71158	SEP202048
10852	47036	BBU100153	22914	59098	KPN107511	34975	71159	SEP202050
10853	47037	BBU100159	22915	59099	KPN108215	34976	71160	SEP202052
10854	47038	BBU100167	22916	59100	KPN108431	34977	71161	SEP202054
10855	47039	BBU100168	22917	59101	KPN108885	34978	71162	SEP202056
10856	47040	BBU100176	22918	59102	KPN109099	34979	71163	SEP202058
10857	47041	BBU100177	22919	59103	KPN109637	34980	71164	SEP202059
10858	47042	BBU100178	22920	59104	KPN109847	34981	71165	SEP202060
10859	47043	BBU100183	22921	59105	KPN112130	34982	71166	SEP202061
10860	47044	BBU100187	22922	59106	KPN200136	34983	71167	SEP202063
10861	47045	BBU100188	22923	59107	KPN200238	34984	71168	SEP202065
10862	47046	BBU100189	22924	59108	KPN200435	34985	71169	SEP202067
10863	47047	BBU100193	22925	59109	KPN200561	34986	71170	SEP202071
10864	47048	BBU100194	22926	59110	KPN200571	34987	71171	SEP202072
10865	47049	BBU100195	22927	59111	KPN200664	34988	71172	SEP202073
10866	47050	BBU100197	22928	59112	KPN200831	34989	71173	SEP202075
10867	47051	BBU100199	22929	59113	KPN201031	34990	71174	SEP202083
10868	47052	BBU100200	22930	59114	KPN201518	34991	71175	SEP202087
10869	47053	BBU100202	22931	59115	KPN201537	34992	71176	SEP202089
10870	47054	BBU100206	22932	59116	KPN201650	34993	71177	SEP202090
10871	47055	BBU100210	22933	59117	KPN201713	34994	71178	SEP202092
10872	47056	BBU100215	22934	59118	KPN201723	34995	71179	SEP202093
10873	47057	BBU100217	22935	59119	KPN201741	34996	71180	SEP202095
10874	47058	BBU100219	22936	59120	KPN201795	34997	71181	SEP202098
10875	47059	BBU100224	22937	59121	KPN201811	34998	71182	SEP202102
10876	47060	BBU100225	22938	59122	KPN201812	34999	71183	SEP202106
10877	47061	BBU100228	22939	59123	KPN202195	35000	71184	SEP202107
10878	47062	BBU100229	22940	59124	KPN202650	35001	71185	SEP202110
10879	47063	BBU100231	22941	59125	KPN202668	35002	71186	SEP202112
10880	47064	BBU100232	22942	59126	KPN202674	35003	71187	SEP202114
10881	47065	BBU100234	22943	59127	KPN202806	35004	71188	SEP202115
10882	47066	BBU100236	22944	59128	KPN202849	35005	71189	SEP202116
10883	47067	BBU100239	22945	59129	KPN202940	35006	71190	SEP202121
10884	47068	BBU100240	22946	59130	KPN203154	35007	71191	SEP202130
10885	47069	BBU100246	22947	59131	KPN203199	35008	71192	SEP202131

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10886	47070	BBU100250	22948	59132	KPN203248	35009	71193	SEP202140
10887	47071	BBU100253	22949	59133	KPN203259	35010	71194	SEP202141
10888	47072	BBU100255	22950	59134	KPN203709	35011	71195	SEP202142
10889	47073	BBU100256	22951	59135	KPN204064	35012	71196	SEP202149
10890	47074	BBU100261	22952	59136	KPN204073	35013	71197	SEP202153
10891	47075	BBU100262	22953	59137	KPN204112	35014	71198	SEP202168
10892	47076	BBU100271	22954	59138	KPN204114	35015	71199	SEP202172
10893	47077	BBU100283	22955	59139	KPN204198	35016	71200	SEP202175
10894	47078	BBU100284	22956	59140	KPN204278	35017	71201	SEP202180
10895	47079	BBU100289	22957	59141	KPN204459	35018	71202	SEP202182
10896	47080	BBU100295	22958	59142	KPN204472	35019	71203	SEP202183
10897	47081	BBU100298	22959	59143	KPN204506	35020	71204	SEP202194
10898	47082	BBU100299	22960	59144	KPN204541	35021	71205	SEP202196
10899	47083	BBU100300	22961	59145	KPN204999	35022	71206	SEP202199
10900	47084	BBU100301	22962	59146	KPN205131	35023	71207	SEP202203
10901	47085	BBU100302	22963	59147	KPN205236	35024	71208	SEP202208
10902	47086	BBU100303	22964	59148	KPN205280	35025	71209	SEP202217
10903	47087	BBU100305	22965	59149	KPN205390	35026	71210	SEP202219
10904	47088	BBU100310	22966	59150	KPN205542	35027	71211	SEP202225
10905	47089	BBU100313	22967	59151	KPN205579	35028	71212	SEP202228
10906	47090	BBU100322	22968	59152	KPN205610	35029	71213	SEP202229
10907	47091	BBU100325	22969	59153	KPN206188	35030	71214	SEP202230
10908	47092	BBU100333	22970	59154	KPN206267	35031	71215	SEP202232
10909	47093	BBU100334	22971	59155	KPN206317	35032	71216	SEP202243
10910	47094	BBU100336	22972	59156	KPN206346	35033	71217	SEP202279
10911	47095	BBU100337	22973	59157	KPN206582	35034	71218	SEP202299
10912	47096	BBU100338	22974	59158	KPN206660	35035	71219	SEP202312
10913	47097	BBU100339	22975	59159	KPN206674	35036	71220	SEP202377
10914	47098	BBU100340	22976	59160	KPN206801	35037	71221	SEP202387
10915	47099	BBU100341	22977	59161	KPN207037	35038	71222	SEP202395
10916	47100	BBU100344	22978	59162	KPN207078	35039	71223	SEP202410
10917	47101	BBU100346	22979	59163	KPN207142	35040	71224	SEP202417
10918	47102	BBU100347	22980	59164	KPN207172	35041	71225	SEP202424
10919	47103	BBU100349	22981	59165	KPN207289	35042	71226	SEP202480
10920	47104	BBU100357	22982	59166	KPN208187	35043	71227	SEP202484
10921	47105	BBU100362	22983	59167	KPN208188	35044	71228	SEP202519
10922	47106	BBU100367	22984	59168	KPN211627	35045	71229	SEP202534
10923	47107	BBU100369	22985	59169	KPN300005	35046	71230	SEP202550
10924	47108	BBU100370	22986	59170	KPN300020	35047	71231	SEP202555
10925	47109	BBU100371	22987	59171	KPN300029	35048	71232	SEP202577
10926	47110	BBU100374	22988	59172	KPN300031	35049	71233	SEP202582
10927	47111	BBU100375	22989	59173	KPN300042	35050	71234	SEP202595
10928	47112	BBU100379	22990	59174	KPN300043	35051	71235	SEP202646
10929	47113	BBU100385	22991	59175	KPN300045	35052	71236	SEP202650
10930	47114	BBU100386	22992	59176	KPN300047	35053	71237	SEP203226
10931	47115	BBU100387	22993	59177	KPN300048	35054	71238	SEP203256
10932	47116	BBU100388	22994	59178	KPN300051	35055	71239	SEP203376
10933	47117	BBU100389	22995	59179	KPN300059	35056	71240	SEP203585
10934	47118	BBU100390	22996	59180	KPN300067	35057	71241	SEP203649
10935	47119	BBU100391	22997	59181	KPN300078	35058	71242	SEP203695
10936	47120	BBU100392	22998	59182	KPN300080	35059	71243	SEP203770
10937	47121	BBU100393	22999	59183	KPN300091	35060	71244	SEP203908
10938	47122	BBU100395	23000	59184	KPN300102	35061	71245	SEP204035
10939	47123	BBU100401	23001	59185	KPN300107	35062	71246	SEP204150
10940	47124	BBU100406	23002	59186	KPN300113	35063	71247	SEP204192

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10941	47125	BBU100407	23003	59187	KPN300127	35064	71248	SEP204208
10942	47126	BBU100411	23004	59188	KPN300130	35065	71249	SEP204223
10943	47127	BBU100416	23005	59189	KPN300132	35066	71250	SEP204230
10944	47128	BBU100419	23006	59190	KPN300133	35067	71251	SEP204358
10945	47129	BBU100426	23007	59191	KPN300134	35068	71252	SHA100008
10946	47130	BBU100430	23008	59192	KPN300143	35069	71253	SHA100009
10947	47131	BBU100434	23009	59193	KPN300147	35070	71254	SHA100019
10948	47132	BBU100435	23010	59194	KPN300148	35071	71255	SHA100023
10949	47133	BBU100436	23011	59195	KPN300161	35072	71256	SHA100024
10950	47134	BBU100437	23012	59196	KPN300172	35073	71257	SHA100025
10951	47135	BBU100439	23013	59197	KPN300173	35074	71258	SHA100027
10952	47136	BBU100440	23014	59198	KPN300176	35075	71259	SHA100035
10953	47137	BBU100441	23015	59199	KPN300177	35076	71260	SHA100036
10954	47138	BBU100444	23016	59200	KPN300181	35077	71261	SHA100040
10955	47139	BBU100445	23017	59201	KPN300184	35078	71262	SHA100041
10956	47140	BBU100446	23018	59202	KPN300196	35079	71263	SHA100042
10957	47141	BBU100452	23019	59203	KPN300200	35080	71264	SHA100053
10958	47142	BBU100453	23020	59204	KPN300202	35081	71265	SHA100054
10959	47143	BBU100460	23021	59205	KPN300203	35082	71266	SHA100055
10960	47144	BBU100471	23022	59206	KPN300210	35083	71267	SHA100056
10961	47145	BBU100475	23023	59207	KPN300213	35084	71268	SHA100057
10962	47146	BBU100476	23024	59208	KPN300214	35085	71269	SHA100066
10963	47147	BBU100477	23025	59209	KPN300216	35086	71270	SHA100070
10964	47148	BBU100478	23026	59210	KPN300218	35087	71271	SHA100072
10965	47149	BBU100479	23027	59211	KPN300226	35088	71272	SHA100075
10966	47150	BBU100480	23028	59212	KPN300233	35089	71273	SHA100076
10967	47151	BBU100481	23029	59213	KPN300234	35090	71274	SHA100081
10968	47152	BBU100482	23030	59214	KPN300235	35091	71275	SHA100082
10969	47153	BBU100483	23031	59215	KPN300246	35092	71276	SHA100083
10970	47154	BBU100484	23032	59216	KPN300252	35093	71277	SHA100085
10971	47155	BBU100485	23033	59217	KPN300254	35094	71278	SHA100088
10972	47156	BBU100486	23034	59218	KPN300264	35095	71279	SHA100091
10973	47157	BBU100487	23035	59219	KPN300265	35096	71280	SHA100092
10974	47158	BBU100488	23036	59220	KPN300270	35097	71281	SHA100093
10975	47159	BBU100489	23037	59221	KPN300272	35098	71282	SHA100103
10976	47160	BBU100490	23038	59222	KPN300274	35099	71283	SHA100105
10977	47161	BBU100491	23039	59223	KPN300275	35100	71284	SHA100107
10978	47162	BBU100492	23040	59224	KPN300277	35101	71285	SHA100109
10979	47163	BBU100493	23041	59225	KPN300278	35102	71286	SHA100110
10980	47164	BBU100494	23042	59226	KPN300279	35103	71287	SHA100112
10981	47165	BBU100495	23043	59227	KPN300283	35104	71288	SHA100113
10982	47166	BBU100496	23044	59228	KPN300285	35105	71289	SHA100117
10983	47167	BBU100497	23045	59229	KPN300286	35106	71290	SHA100118
10984	47168	BBU100498	23046	59230	KPN300290	35107	71291	SHA100119
10985	47169	BBU100499	23047	59231	KPN300303	35108	71292	SHA100124
10986	47170	BBU100500	23048	59232	KPN300306	35109	71293	SHA100132
10987	47171	BBU100501	23049	59233	KPN300307	35110	71294	SHA100136
10988	47172	BBU100502	23050	59234	KPN300310	35111	71295	SHA100138
10989	47173	BBU100503	23051	59235	KPN300314	35112	71296	SHA100140
10990	47174	BBU100504	23052	59236	KPN300317	35113	71297	SHA100141
10991	47175	BBU100507	23053	59237	KPN300322	35114	71298	SHA100142
10992	47176	BBU100512	23054	59238	KPN300323	35115	71299	SHA100143
10993	47177	BBU100513	23055	59239	KPN300325	35116	71300	SHA100146
10994	47178	BBU100517	23056	59240	KPN300326	35117	71301	SHA100148
10995	47179	BBU100527	23057	59241	KPN300330	35118	71302	SHA100151

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
10996	47180	BBU100535	23058	59242	KPN300333	35119	71303	SHA100154
10997	47181	BBU100539	23059	59243	KPN300336	35120	71304	SHA100165
10998	47182	BBU100541	23060	59244	KPN300345	35121	71305	SHA100169
10999	47183	BBU100543	23061	59245	KPN300355	35122	71306	SHA100170
11000	47184	BBU100545	23062	59246	KPN300357	35123	71307	SHA100171
11001	47185	BBU100547	23063	59247	KPN300374	35124	71308	SHA100172
11002	47186	BBU100551	23064	59248	KPN300375	35125	71309	SHA100177
11003	47187	BBU100556	23065	59249	KPN300377	35126	71310	SHA100178
11004	47188	BBU100557	23066	59250	KPN300384	35127	71311	SHA100179
11005	47189	BBU100559	23067	59251	KPN300389	35128	71312	SHA100180
11006	47190	BBU100560	23068	59252	KPN300399	35129	71313	SHA100193
11007	47191	BBU100564	23069	59253	KPN300407	35130	71314	SHA100217
11008	47192	BBU100569	23070	59254	KPN300416	35131	71315	SHA100218
11009	47193	BBU100571	23071	59255	KPN300418	35132	71316	SHA100223
11010	47194	BBU100574	23072	59256	KPN300422	35133	71317	SHA100227
11011	47195	BBU100578	23073	59257	KPN300423	35134	71318	SHA100232
11012	47196	BBU100584	23074	59258	KPN300432	35135	71319	SHA100233
11013	47197	BBU100585	23075	59259	KPN300433	35136	71320	SHA100235
11014	47198	BBU100586	23076	59260	KPN300435	35137	71321	SHA100236
11015	47199	BBU100587	23077	59261	KPN300439	35138	71322	SHA100242
11016	47200	BBU100588	23078	59262	KPN300446	35139	71323	SHA100251
11017	47201	BBU100589	23079	59263	KPN300448	35140	71324	SHA100255
11018	47202	BBU100593	23080	59264	KPN300453	35141	71325	SHA100260
11019	47203	BBU100597	23081	59265	KPN300455	35142	71326	SHA100262
11020	47204	BBU100598	23082	59266	KPN300457	35143	71327	SHA100265
11021	47205	BBU100600	23083	59267	KPN300463	35144	71328	SHA100275
11022	47206	BBU100606	23084	59268	KPN300467	35145	71329	SHA100279
11023	47207	BBU100611	23085	59269	KPN300479	35146	71330	SHA100281
11024	47208	BBU100612	23086	59270	KPN300480	35147	71331	SHA100288
11025	47209	BBU100614	23087	59271	KPN300484	35148	71332	SHA100292
11026	47210	BBU100615	23088	59272	KPN300488	35149	71333	SHA100294
11027	47211	BBU100618	23089	59273	KPN300489	35150	71334	SHA100297
11028	47212	BBU100619	23090	59274	KPN300490	35151	71335	SHA100298
11029	47213	BBU100622	23091	59275	KPN300491	35152	71336	SHA100310
11030	47214	BBU100625	23092	59276	KPN300492	35153	71337	SHA100319
11031	47215	BBU100628	23093	59277	KPN300505	35154	71338	SHA100321
11032	47216	BBU100629	23094	59278	KPN300507	35155	71339	SHA100322
11033	47217	BBU100631	23095	59279	KPN300513	35156	71340	SHA100326
11034	47218	BBU100632	23096	59280	KPN300514	35157	71341	SHA100327
11035	47219	BBU100634	23097	59281	KPN300516	35158	71342	SHA100333
11036	47220	BBU100635	23098	59282	KPN300520	35159	71343	SHA100334
11037	47221	BBU100638	23099	59283	KPN300522	35160	71344	SHA100337
11038	47222	BBU100642	23100	59284	KPN300526	35161	71345	SHA100340
11039	47223	BBU100644	23101	59285	KPN300527	35162	71346	SHA100341
11040	47224	BBU100645	23102	59286	KPN300529	35163	71347	SHA100342
11041	47225	BBU100648	23103	59287	KPN300530	35164	71348	SHA100354
11042	47226	BBU100654	23104	59288	KPN300531	35165	71349	SHA100355
11043	47227	BBU100659	23105	59289	KPN300536	35166	71350	SHA100359
11044	47228	BBU100665	23106	59290	KPN300540	35167	71351	SHA100362
11045	47229	BBU100677	23107	59291	KPN300541	35168	71352	SHA100365
11046	47230	BBU100679	23108	59292	KPN300544	35169	71353	SHA100368
11047	47231	BBU100681	23109	59293	KPN300548	35170	71354	SHA100370
11048	47232	BBU100683	23110	59294	KPN300551	35171	71355	SHA100371
11049	47233	BBU100684	23111	59295	KPN300573	35172	71356	SHA100373
11050	47234	BBU100685	23112	59296	KPN300574	35173	71357	SHA100379

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11051	47235	BBU100686	23113	59297	KPN300575	35174	71358	SHA100381
11052	47236	BBU100689	23114	59298	KPN300577	35175	71359	SHA100389
11053	47237	BBU100693	23115	59299	KPN300578	35176	71360	SHA100392
11054	47238	BBU100694	23116	59300	KPN300579	35177	71361	SHA100393
11055	47239	BBU100695	23117	59301	KPN300581	35178	71362	SHA100400
11056	47240	BBU100696	23118	59302	KPN300590	35179	71363	SHA100405
11057	47241	BBU100697	23119	59303	KPN300593	35180	71364	SHA100406
11058	47242	BBU100698	23120	59304	KPN300595	35181	71365	SHA100407
11059	47243	BBU100703	23121	59305	KPN300596	35182	71366	SHA100412
11060	47244	BBU100705	23122	59306	KPN300605	35183	71367	SHA100413
11061	47245	BBU100709	23123	59307	KPN300609	35184	71368	SHA100415
11062	47246	BBU100711	23124	59308	KPN300612	35185	71369	SHA100418
11063	47247	BBU100714	23125	59309	KPN300615	35186	71370	SHA100419
11064	47248	BBU100719	23126	59310	KPN300616	35187	71371	SHA100424
11065	47249	BBU100720	23127	59311	KPN300622	35188	71372	SHA100433
11066	47250	BBU100723	23128	59312	KPN300629	35189	71373	SHA100436
11067	47251	BBU100726	23129	59313	KPN300636	35190	71374	SHA100437
11068	47252	BBU100729	23130	59314	KPN300638	35191	71375	SHA100441
11069	47253	BBU100731	23131	59315	KPN300639	35192	71376	SHA100442
11070	47254	BBU100736	23132	59316	KPN300640	35193	71377	SHA100443
11071	47255	BBU100737	23133	59317	KPN300648	35194	71378	SHA100447
11072	47256	BBU100741	23134	59318	KPN300649	35195	71379	SHA100448
11073	47257	BBU100753	23135	59319	KPN300650	35196	71380	SHA100451
11074	47258	BBU100763	23136	59320	KPN300653	35197	71381	SHA100452
11075	47259	BBU100766	23137	59321	KPN300668	35198	71382	SHA100455
11076	47260	BBU100768	23138	59322	KPN300684	35199	71383	SHA100464
11077	47261	BBU100769	23139	59323	KPN300686	35200	71384	SHA100465
11078	47262	BBU100777	23140	59324	KPN300695	35201	71385	SHA100469
11079	47263	BBU100779	23141	59325	KPN300696	35202	71386	SHA100475
11080	47264	BBU100780	23142	59326	KPN300697	35203	71387	SHA100476
11081	47265	BBU100785	23143	59327	KPN300698	35204	71388	SHA100482
11082	47266	BBU100787	23144	59328	KPN300699	35205	71389	SHA100488
11083	47267	BBU100788	23145	59329	KPN300700	35206	71390	SHA100490
11084	47268	BBU100789	23146	59330	KPN300701	35207	71391	SHA100491
11085	47269	BBU100790	23147	59331	KPN300702	35208	71392	SHA100492
11086	47270	BBU100792	23148	59332	KPN300703	35209	71393	SHA100498
11087	47271	BBU100793	23149	59333	KPN300705	35210	71394	SHA100499
11088	47272	BBU100796	23150	59334	KPN300714	35211	71395	SHA100500
11089	47273	BBU100799	23151	59335	KPN300721	35212	71396	SHA100501
11090	47274	BBU100800	23152	59336	KPN300735	35213	71397	SHA100502
11091	47275	BBU100802	23153	59337	KPN300745	35214	71398	SHA100503
11092	47276	BBU100803	23154	59338	KPN300756	35215	71399	SHA100506
11093	47277	BBU100804	23155	59339	KPN300758	35216	71400	SHA100509
11094	47278	BBU100808	23156	59340	KPN300766	35217	71401	SHA100514
11095	47279	BBU100809	23157	59341	KPN300770	35218	71402	SHA100516
11096	47280	BBU100813	23158	59342	KPN300773	35219	71403	SHA100524
11097	47281	BBU100816	23159	59343	KPN300785	35220	71404	SHA100529
11098	47282	BBU100817	23160	59344	KPN300786	35221	71405	SHA100531
11099	47283	BBU100827	23161	59345	KPN300790	35222	71406	SHA100533
11100	47284	BBU100828	23162	59346	KPN300802	35223	71407	SHA100537
11101	47285	BBU100829	23163	59347	KPN300804	35224	71408	SHA100540
11102	47286	BBU100832	23164	59348	KPN300812	35225	71409	SHA100548
11103	47287	BBU100833	23165	59349	KPN300813	35226	71410	SHA100551
11104	47288	BBU100834	23166	59350	KPN300814	35227	71411	SHA100553
11105	47289	BBU100836	23167	59351	KPN300815	35228	71412	SHA100561

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11106	47290	BBU100842	23168	59352	KPN300816	35229	71413	SHA100562
11107	47291	BCE100016	23169	59353	KPN300829	35230	71414	SHA100568
11108	47292	BCE100035	23170	59354	KPN300832	35231	71415	SHA100569
11109	47293	BCE100052	23171	59355	KPN300847	35232	71416	SHA100570
11110	47294	BCE100058	23172	59356	KPN300864	35233	71417	SHA100581
11111	47295	BCE100085	23173	59357	KPN300867	35234	71418	SHA100585
11112	47296	BCE100092	23174	59358	KPN300868	35235	71419	SHA100587
11113	47297	BCE100121	23175	59359	KPN300869	35236	71420	SHA100588
11114	47298	BCE100122	23176	59360	KPN300870	35237	71421	SHA100589
11115	47299	BCE100150	23177	59361	KPN300871	35238	71422	SHA100594
11116	47300	BCE100189	23178	59362	KPN300872	35239	71423	SHA100595
11117	47301	BCE100228	23179	59363	KPN300875	35240	71424	SHA100600
11118	47302	BCE100234	23180	59364	KPN300876	35241	71425	SHA100601
11119	47303	BCE100247	23181	59365	KPN300879	35242	71426	SHA100602
11120	47304	BCE100249	23182	59366	KPN300882	35243	71427	SHA100608
11121	47305	BCE100250	23183	59367	KPN300883	35244	71428	SHA100609
11122	47306	BCE100277	23184	59368	KPN300884	35245	71429	SHA100620
11123	47307	BCE100299	23185	59369	KPN300885	35246	71430	SHA100631
11124	47308	BCE100301	23186	59370	KPN300897	35247	71431	SHA100633
11125	47309	BCE100302	23187	59371	KPN300900	35248	71432	SHA100637
11126	47310	BCE100315	23188	59372	KPN300906	35249	71433	SHA100638
11127	47311	BCE100353	23189	59373	KPN300907	35250	71434	SHA100639
11128	47312	BCE100403	23190	59374	KPN300918	35251	71435	SHA100640
11129	47313	BCE100404	23191	59375	KPN300926	35252	71436	SHA100641
11130	47314	BCE100457	23192	59376	KPN300929	35253	71437	SHA100644
11131	47315	BCE100458	23193	59377	KPN300934	35254	71438	SHA100647
11132	47316	BCE100461	23194	59378	KPN300959	35255	71439	SHA100648
11133	47317	BCE100467	23195	59379	KPN300966	35256	71440	SHA100649
11134	47318	BCE100474	23196	59380	KPN300967	35257	71441	SHA100651
11135	47319	BCE100481	23197	59381	KPN300972	35258	71442	SHA100654
11136	47320	BCE100512	23198	59382	KPN300973	35259	71443	SHA100656
11137	47321	BCE100520	23199	59383	KPN300984	35260	71444	SHA100660
11138	47322	BCE100539	23200	59384	KPN300994	35261	71445	SHA100662
11139	47323	BCE100542	23201	59385	KPN300997	35262	71446	SHA100663
11140	47324	BCE100543	23202	59386	KPN301017	35263	71447	SHA100667
11141	47325	BCE100574	23203	59387	KPN301023	35264	71448	SHA100679
11142	47326	BCE100591	23204	59388	KPN301024	35265	71449	SHA100686
11143	47327	BCE100645	23205	59389	KPN301038	35266	71450	SHA100687
11144	47328	BCE100650	23206	59390	KPN301039	35267	71451	SHA100689
11145	47329	BCE100659	23207	59391	KPN301041	35268	71452	SHA100697
11146	47330	BCE100669	23208	59392	KPN301044	35269	71453	SHA100698
11147	47331	BCE100671	23209	59393	KPN301045	35270	71454	SHA100699
11148	47332	BCE100683	23210	59394	KPN301047	35271	71455	SHA100701
11149	47333	BCE100693	23211	59395	KPN301048	35272	71456	SHA100711
11150	47334	BCE100738	23212	59396	KPN301049	35273	71457	SHA100712
11151	47335	BCE100786	23213	59397	KPN301056	35274	71458	SHA100713
11152	47336	BCE100810	23214	59398	KPN301057	35275	71459	SHA100714
11153	47337	BCE100818	23215	59399	KPN301059	35276	71460	SHA100715
11154	47338	BCE100831	23216	59400	KPN301065	35277	71461	SHA100716
11155	47339	BCE100840	23217	59401	KPN301066	35278	71462	SHA100718
11156	47340	BCE100856	23218	59402	KPN301067	35279	71463	SHA100726
11157	47341	BCE100913	23219	59403	KPN301069	35280	71464	SHA100738
11158	47342	BCE100919	23220	59404	KPN301083	35281	71465	SHA100744
11159	47343	BCE100924	23221	59405	KPN301084	35282	71466	SHA100745
11160	47344	BCE100929	23222	59406	KPN301086	35283	71467	SHA100752

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11161	47345	BCE100941	23223	59407	KPN301087	35284	71468	SHA100755
11162	47346	BCE100945	23224	59408	KPN301088	35285	71469	SHA100756
11163	47347	BCE100962	23225	59409	KPN301095	35286	71470	SHA100761
11164	47348	BCE100967	23226	59410	KPN301099	35287	71471	SHA100763
11165	47349	BCE100976	23227	59411	KPN301102	35288	71472	SHA100764
11166	47350	BCE100985	23228	59412	KPN301109	35289	71473	SHA100765
11167	47351	BCE100989	23229	59413	KPN301110	35290	71474	SHA100766
11168	47352	BCE100990	23230	59414	KPN301111	35291	71475	SHA100768
11169	47353	BCE101034	23231	59415	KPN301113	35292	71476	SHA100769
11170	47354	BCE101035	23232	59416	KPN301116	35293	71477	SHA100770
11171	47355	BCE101065	23233	59417	KPN301117	35294	71478	SHA100771
11172	47356	BCE101069	23234	59418	KPN301120	35295	71479	SHA100772
11173	47357	BCE101081	23235	59419	KPN301121	35296	71480	SHA100773
11174	47358	BCE101088	23236	59420	KPN301122	35297	71481	SHA100774
11175	47359	BCE101116	23237	59421	KPN301123	35298	71482	SHA100775
11176	47360	BCE101162	23238	59422	KPN301135	35299	71483	SHA100777
11177	47361	BCE101166	23239	59423	KPN301139	35300	71484	SHA100778
11178	47362	BCE101174	23240	59424	KPN301141	35301	71485	SHA100780
11179	47363	BCE101176	23241	59425	KPN301143	35302	71486	SHA100785
11180	47364	BCE101177	23242	59426	KPN301146	35303	71487	SHA100791
11181	47365	BCE101181	23243	59427	KPN301147	35304	71488	SHA100792
11182	47366	BCE101199	23244	59428	KPN301149	35305	71489	SHA100794
11183	47367	BCE101204	23245	59429	KPN301152	35306	71490	SHA100805
11184	47368	BCE101208	23246	59430	KPN301162	35307	71491	SHA100807
11185	47369	BCE101210	23247	59431	KPN301170	35308	71492	SHA100809
11186	47370	BCE101232	23248	59432	KPN301174	35309	71493	SHA100813
11187	47371	BCE101233	23249	59433	KPN301176	35310	71494	SHA100814
11188	47372	BCE101250	23250	59434	KPN301178	35311	71495	SHA100819
11189	47373	BCE101252	23251	59435	KPN301179	35312	71496	SHA100823
11190	47374	BCE101253	23252	59436	KPN301180	35313	71497	SHA100824
11191	47375	BCE101273	23253	59437	KPN301181	35314	71498	SHA100825
11192	47376	BCE101287	23254	59438	KPN301199	35315	71499	SHA100826
11193	47377	BCE101292	23255	59439	KPN301207	35316	71500	SHA100827
11194	47378	BCE101317	23256	59440	KPN301209	35317	71501	SHA100833
11195	47379	BCE101347	23257	59441	KPN301222	35318	71502	SHA100834
11196	47380	BCE101350	23258	59442	KPN301224	35319	71503	SHA100843
11197	47381	BCE101370	23259	59443	KPN301247	35320	71504	SHA100844
11198	47382	BCE101378	23260	59444	KPN301254	35321	71505	SHA100845
11199	47383	BCE101393	23261	59445	KPN301257	35322	71506	SHA100846
11200	47384	BCE101394	23262	59446	KPN301258	35323	71507	SHA100848
11201	47385	BCE101396	23263	59447	KPN301260	35324	71508	SHA100850
11202	47386	BCE101419	23264	59448	KPN301264	35325	71509	SHA100853
11203	47387	BCE101423	23265	59449	KPN301265	35326	71510	SHA100854
11204	47388	BCE101466	23266	59450	KPN301267	35327	71511	SHA100862
11205	47389	BCE101468	23267	59451	KPN301269	35328	71512	SHA100863
11206	47390	BCE101479	23268	59452	KPN301276	35329	71513	SHA100866
11207	47391	BCE101499	23269	59453	KPN301278	35330	71514	SHA100868
11208	47392	BCE101525	23270	59454	KPN301280	35331	71515	SHA100874
11209	47393	BCE101526	23271	59455	KPN301295	35332	71516	SHA100888
11210	47394	BCE101537	23272	59456	KPN301296	35333	71517	SHA100894
11211	47395	BCE101546	23273	59457	KPN301297	35334	71518	SHA100895
11212	47396	BCE101547	23274	59458	KPN301299	35335	71519	SHA100898
11213	47397	BCE101562	23275	59459	KPN301301	35336	71520	SHA100899
11214	47398	BCE101565	23276	59460	KPN301302	35337	71521	SHA100902
11215	47399	BCE101590	23277	59461	KPN301304	35338	71522	SHA100905

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11216	47400	BCE101609	23278	59462	KPN301306	35339	71523	SHA100908
11217	47401	BCE101620	23279	59463	KPN301312	35340	71524	SHA100909
11218	47402	BCE101645	23280	59464	KPN301318	35341	71525	SHA100910
11219	47403	BCE101676	23281	59465	KPN301327	35342	71526	SHA100911
11220	47404	BCE101681	23282	59466	KPN301328	35343	71527	SHA100914
11221	47405	BCE101717	23283	59467	KPN301330	35344	71528	SHA100915
11222	47406	BCE101730	23284	59468	KPN301336	35345	71529	SHA100922
11223	47407	BCE101745	23285	59469	KPN301340	35346	71530	SHA100923
11224	47408	BCE101760	23286	59470	KPN301345	35347	71531	SHA100927
11225	47409	BCE101777	23287	59471	KPN301346	35348	71532	SHA100928
11226	47410	BCE101785	23288	59472	KPN301350	35349	71533	SHA100929
11227	47411	BCE101787	23289	59473	KPN301351	35350	71534	SHA100939
11228	47412	BCE101792	23290	59474	KPN301352	35351	71535	SHA100944
11229	47413	BCE101800	23291	59475	KPN301361	35352	71536	SHA100951
11230	47414	BCE101816	23292	59476	KPN301376	35353	71537	SHA100952
11231	47415	BCE101833	23293	59477	KPN301377	35354	71538	SHA100953
11232	47416	BCE101872	23294	59478	KPN301380	35355	71539	SHA100955
11233	47417	BCE101880	23295	59479	KPN301384	35356	71540	SHA100958
11234	47418	BCE101906	23296	59480	KPN301394	35357	71541	SHA100965
11235	47419	BCE101925	23297	59481	KPN301398	35358	71542	SHA100967
11236	47420	BCE101969	23298	59482	KPN301399	35359	71543	SHA100969
11237	47421	BCE101979	23299	59483	KPN301400	35360	71544	SHA100970
11238	47422	BCE101996	23300	59484	KPN301402	35361	71545	SHA100972
11239	47423	BCE102004	23301	59485	KPN301403	35362	71546	SHA100973
11240	47424	BCE102008	23302	59486	KPN301405	35363	71547	SHA100977
11241	47425	BCE102018	23303	59487	KPN301406	35364	71548	SHA100979
11242	47426	BCE102027	23304	59488	KPN301409	35365	71549	SHA100981
11243	47427	BCE102043	23305	59489	KPN301415	35366	71550	SHA100982
11244	47428	BCE102065	23306	59490	KPN301426	35367	71551	SHA100985
11245	47429	BCE102082	23307	59491	KPN301427	35368	71552	SHA100988
11246	47430	BCE102110	23308	59492	KPN301429	35369	71553	SHA100990
11247	47431	BCE102114	23309	59493	KPN301430	35370	71554	SHA100991
11248	47432	BCE102136	23310	59494	KPN301431	35371	71555	SHA100992
11249	47433	BCE102153	23311	59495	KPN301439	35372	71556	SHA101008
11250	47434	BCE102163	23312	59496	KPN301440	35373	71557	SHA101009
11251	47435	BCE102182	23313	59497	KPN301442	35374	71558	SHA101010
11252	47436	BCE102211	23314	59498	KPN301443	35375	71559	SHA101014
11253	47437	BCE102263	23315	59499	KPN301446	35376	71560	SHA101015
11254	47438	BCE102274	23316	59500	KPN301447	35377	71561	SHA101019
11255	47439	BCE102281	23317	59501	KPN301450	35378	71562	SHA101021
11256	47440	BCE102283	23318	59502	KPN301482	35379	71563	SHA101033
11257	47441	BCE102342	23319	59503	KPN301483	35380	71564	SHA101034
11258	47442	BCE102350	23320	59504	KPN301484	35381	71565	SHA101039
11259	47443	BCE102364	23321	59505	KPN301487	35382	71566	SHA101040
11260	47444	BCE102392	23322	59506	KPN301496	35383	71567	SHA101041
11261	47445	BCE102411	23323	59507	KPN301497	35384	71568	SHA101042
11262	47446	BCE102413	23324	59508	KPN301507	35385	71569	SHA101047
11263	47447	BCE102421	23325	59509	KPN301529	35386	71570	SHA101048
11264	47448	BCE102426	23326	59510	KPN301537	35387	71571	SHA101049
11265	47449	BCE102445	23327	59511	KPN301541	35388	71572	SHA101054
11266	47450	BCE102461	23328	59512	KPN301549	35389	71573	SHA101055
11267	47451	BCE102508	23329	59513	KPN301553	35390	71574	SHA101060
11268	47452	BCE102515	23330	59514	KPN301558	35391	71575	SHA101061
11269	47453	BCE102526	23331	59515	KPN301560	35392	71576	SHA101064
11270	47454	BCE102555	23332	59516	KPN301561	35393	71577	SHA101069

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11271	47455	BCE102560	23333	59517	KPN301564	35394	71578	SHA101070
11272	47456	BCE102578	23334	59518	KPN301574	35395	71579	SHA101073
11273	47457	BCE102585	23335	59519	KPN301575	35396	71580	SHA101075
11274	47458	BCE102619	23336	59520	KPN301576	35397	71581	SHA101077
11275	47459	BCE102638	23337	59521	KPN301578	35398	71582	SHA101078
11276	47460	BCE102642	23338	59522	KPN301584	35399	71583	SHA101079
11277	47461	BCE102651	23339	59523	KPN301585	35400	71584	SHA101080
11278	47462	BCE102658	23340	59524	KPN301586	35401	71585	SHA101090
11279	47463	BCE102679	23341	59525	KPN301587	35402	71586	SHA101091
11280	47464	BCE102700	23342	59526	KPN301597	35403	71587	SHA101098
11281	47465	BCE102714	23343	59527	KPN301600	35404	71588	SHA101099
11282	47466	BCE102715	23344	59528	KPN301602	35405	71589	SHA101100
11283	47467	BCE102722	23345	59529	KPN301609	35406	71590	SHA101101
11284	47468	BCE102728	23346	59530	KPN301618	35407	71591	SHA101106
11285	47469	BCE102742	23347	59531	KPN301629	35408	71592	SHA101107
11286	47470	BCE102752	23348	59532	KPN301634	35409	71593	SHA101109
11287	47471	BCE102797	23349	59533	KPN301638	35410	71594	SHA101112
11288	47472	BCE102809	23350	59534	KPN301643	35411	71595	SHA101129
11289	47473	BCE102837	23351	59535	KPN301645	35412	71596	SHA101130
11290	47474	BCE102840	23352	59536	KPN301659	35413	71597	SHA101133
11291	47475	BCE102844	23353	59537	KPN301663	35414	71598	SHA101136
11292	47476	BCE102848	23354	59538	KPN301690	35415	71599	SHA101138
11293	47477	BCE102877	23355	59539	KPN301691	35416	71600	SHA101143
11294	47478	BCE102893	23356	59540	KPN301692	35417	71601	SHA101150
11295	47479	BCE102933	23357	59541	KPN301693	35418	71602	SHA101153
11296	47480	BCE102972	23358	59542	KPN301694	35419	71603	SHA101154
11297	47481	BCE102975	23359	59543	KPN301695	35420	71604	SHA101159
11298	47482	BCE102976	23360	59544	KPN301710	35421	71605	SHA101162
11299	47483	BCE102990	23361	59545	KPN301718	35422	71606	SHA101169
11300	47484	BCE102997	23362	59546	KPN301719	35423	71607	SHA101184
11301	47485	BCE103008	23363	59547	KPN301721	35424	71608	SHA101186
11302	47486	BCE103017	23364	59548	KPN301730	35425	71609	SHA101187
11303	47487	BCE103020	23365	59549	KPN301732	35426	71610	SHA101190
11304	47488	BCE103036	23366	59550	KPN301741	35427	71611	SHA101191
11305	47489	BCE103057	23367	59551	KPN301756	35428	71612	SHA101192
11306	47490	BCE103071	23368	59552	KPN301757	35429	71613	SHA101193
11307	47491	BCE103090	23369	59553	KPN301759	35430	71614	SHA101196
11308	47492	BCE103115	23370	59554	KPN301761	35431	71615	SHA101199
11309	47493	BCE103118	23371	59555	KPN301764	35432	71616	SHA101201
11310	47494	BCE103131	23372	59556	KPN301772	35433	71617	SHA101204
11311	47495	BCE103148	23373	59557	KPN301773	35434	71618	SHA101206
11312	47496	BCE103151	23374	59558	KPN301774	35435	71619	SHA101207
11313	47497	BCE103181	23375	59559	KPN301779	35436	71620	SHA101210
11314	47498	BCE103229	23376	59560	KPN301781	35437	71621	SHA101214
11315	47499	BCE103241	23377	59561	KPN301785	35438	71622	SHA101221
11316	47500	BCE103286	23378	59562	KPN301786	35439	71623	SHA101225
11317	47501	BCE103292	23379	59563	KPN301790	35440	71624	SHA101234
11318	47502	BCE103299	23380	59564	KPN301793	35441	71625	SHA101238
11319	47503	BCE103310	23381	59565	KPN301795	35442	71626	SHA101242
11320	47504	BCE103321	23382	59566	KPN301798	35443	71627	SHA101252
11321	47505	BCE103323	23383	59567	KPN301800	35444	71628	SHA101255
11322	47506	BCE103325	23384	59568	KPN301806	35445	71629	SHA101256
11323	47507	BCE103326	23385	59569	KPN301808	35446	71630	SHA101267
11324	47508	BCE103351	23386	59570	KPN301812	35447	71631	SHA101268
11325	47509	BCE103375	23387	59571	KPN301813	35448	71632	SHA101277

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11326	47510	BCE103385	23388	59572	KPN301814	35449	71633	SHA101283
11327	47511	BCE103411	23389	59573	KPN301830	35450	71634	SHA101287
11328	47512	BCE103450	23390	59574	KPN301831	35451	71635	SHA101288
11329	47513	BCE103462	23391	59575	KPN301832	35452	71636	SHA101290
11330	47514	BCE103498	23392	59576	KPN301837	35453	71637	SHA101303
11331	47515	BCE103506	23393	59577	KPN301845	35454	71638	SHA101307
11332	47516	BCE103519	23394	59578	KPN301847	35455	71639	SHA101308
11333	47517	BCE103528	23395	59579	KPN301848	35456	71640	SHA101309
11334	47518	BCE103536	23396	59580	KPN301849	35457	71641	SHA101310
11335	47519	BCE103574	23397	59581	KPN301850	35458	71642	SHA101311
11336	47520	BCE103599	23398	59582	KPN301852	35459	71643	SHA101312
11337	47521	BCE103623	23399	59583	KPN301853	35460	71644	SHA101314
11338	47522	BCE103649	23400	59584	KPN301854	35461	71645	SHA101317
11339	47523	BCE103653	23401	59585	KPN301855	35462	71646	SHA101318
11340	47524	BCE103660	23402	59586	KPN301856	35463	71647	SHA101324
11341	47525	BCE103665	23403	59587	KPN301858	35464	71648	SHA101325
11342	47526	BCE103736	23404	59588	KPN301863	35465	71649	SHA101326
11343	47527	BCE103738	23405	59589	KPN301864	35466	71650	SHA101328
11344	47528	BCE103740	23406	59590	KPN301865	35467	71651	SHA101330
11345	47529	BCE103747	23407	59591	KPN301867	35468	71652	SHA101334
11346	47530	BCE103763	23408	59592	KPN301883	35469	71653	SHA101340
11347	47531	BCE103775	23409	59593	KPN301886	35470	71654	SHA101345
11348	47532	BCE103799	23410	59594	KPN301891	35471	71655	SHA101346
11349	47533	BCE103848	23411	59595	KPN301893	35472	71656	SHA101347
11350	47534	BCE103851	23412	59596	KPN301895	35473	71657	SHA101351
11351	47535	BCE103856	23413	59597	KPN301897	35474	71658	SHA101353
11352	47536	BCE103874	23414	59598	KPN301899	35475	71659	SHA101355
11353	47537	BCE103899	23415	59599	KPN301904	35476	71660	SHA101356
11354	47538	BCE103917	23416	59600	KPN301905	35477	71661	SHA101359
11355	47539	BCE103921	23417	59601	KPN301908	35478	71662	SHA101361
11356	47540	BCE103922	23418	59602	KPN301911	35479	71663	SHA101362
11357	47541	BCE103924	23419	59603	KPN301913	35480	71664	SHA101365
11358	47542	BCE103942	23420	59604	KPN301914	35481	71665	SHA101370
11359	47543	BCE103943	23421	59605	KPN301915	35482	71666	SHA101374
11360	47544	BCE103998	23422	59606	KPN301921	35483	71667	SHA101375
11361	47545	BCE104003	23423	59607	KPN301922	35484	71668	SHA101376
11362	47546	BCE104021	23424	59608	KPN301923	35485	71669	SHA101377
11363	47547	BCE104022	23425	59609	KPN301924	35486	71670	SHA101381
11364	47548	BCE104032	23426	59610	KPN301952	35487	71671	SHA101386
11365	47549	BCE104048	23427	59611	KPN301953	35488	71672	SHA101387
11366	47550	BCE104052	23428	59612	KPN301954	35489	71673	SHA101389
11367	47551	BCE104059	23429	59613	KPN301957	35490	71674	SHA101391
11368	47552	BCE104102	23430	59614	KPN301960	35491	71675	SHA101395
11369	47553	BCE104111	23431	59615	KPN301962	35492	71676	SHA101398
11370	47554	BCE104123	23432	59616	KPN301965	35493	71677	SHA101400
11371	47555	BCE104127	23433	59617	KPN301969	35494	71678	SHA101401
11372	47556	BCE104151	23434	59618	KPN301970	35495	71679	SHA101402
11373	47557	BCE104168	23435	59619	KPN301974	35496	71680	SHA101403
11374	47558	BCE104176	23436	59620	KPN301976	35497	71681	SHA101407
11375	47559	BCE104233	23437	59621	KPN301980	35498	71682	SHA101408
11376	47560	BCE104244	23438	59622	KPN301983	35499	71683	SHA101409
11377	47561	BCE104245	23439	59623	KPN301994	35500	71684	SHA101410
11378	47562	BCE104254	23440	59624	KPN301995	35501	71685	SHA101411
11379	47563	BCE104286	23441	59625	KPN301998	35502	71686	SHA101413
11380	47564	BCE104300	23442	59626	KPN302000	35503	71687	SHA101414

WO 02/077183									PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11381	47565	BCE104307	23443	59627	KPN302003	35504	71688	SHA101419			
11382	47566	BCE104313	23444	59628	KPN302005	35505	71689	SHA101420			
11383	47567	BCE104326	23445	59629	KPN302014	35506	71690	SHA101424			
11384	47568	BCE104345	23446	59630	KPN302017	35507	71691	SHA101433			
11385	47569	BCE104352	23447	59631	KPN302018	35508	71692	SHA101435			
11386	47570	BCE104390	23448	59632	KPN302023	35509	71693	SHA101443			
11387	47571	BCE104414	23449	59633	KPN302028	35510	71694	SHA101448			
11388	47572	BCE104415	23450	59634	KPN302029	35511	71695	SHA101456			
11389	47573	BCE104424	23451	59635	KPN302040	35512	71696	SHA101458			
11390	47574	BCE104439	23452	59636	KPN302041	35513	71697	SHA101462			
11391	47575	BCE104446	23453	59637	KPN302044	35514	71698	SHA101468			
11392	47576	BCE104450	23454	59638	KPN302046	35515	71699	SHA101470			
11393	47577	BCE104452	23455	59639	KPN302047	35516	71700	SHA101478			
11394	47578	BCE104481	23456	59640	KPN302051	35517	71701	SHA101479			
11395	47579	BCE104511	23457	59641	KPN302059	35518	71702	SHA101480			
11396	47580	BCE104520	23458	59642	KPN302061	35519	71703	SHA101483			
11397	47581	BCE104528	23459	59643	KPN302070	35520	71704	SHA101486			
11398	47582	BCE104584	23460	59644	KPN302079	35521	71705	SHA101487			
11399	47583	BCE104632	23461	59645	KPN302083	35522	71706	SHA101488			
11400	47584	BCE104650	23462	59646	KPN302084	35523	71707	SHA101489			
11401	47585	BCE104653	23463	59647	KPN302085	35524	71708	SHA101501			
11402	47586	BCE104672	23464	59648	KPN302086	35525	71709	SHA101502			
11403	47587	BCE104678	23465	59649	KPN302087	35526	71710	SHA101509			
11404	47588	BCE104738	23466	59650	KPN302095	35527	71711	SHA101510			
11405	47589	BCE104746	23467	59651	KPN302096	35528	71712	SHA101524			
11406	47590	BCE104783	23468	59652	KPN302103	35529	71713	SHA101527			
11407	47591	BCE104817	23469	59653	KPN302104	35530	71714	SHA101537			
11408	47592	BCE104834	23470	59654	KPN302105	35531	71715	SHA101538			
11409	47593	BCE104851	23471	59655	KPN302112	35532	71716	SHA101545			
11410	47594	BCE104852	23472	59656	KPN302113	35533	71717	SHA101546			
11411	47595	BCE104877	23473	59657	KPN302118	35534	71718	SHA101547			
11412	47596	BCE104886	23474	59658	KPN302119	35535	71719	SHA101549			
11413	47597	BCE104891	23475	59659	KPN302135	35536	71720	SHA101552			
11414	47598	BCE104897	23476	59660	KPN302137	35537	71721	SHA101556			
11415	47599	BCE104912	23477	59661	KPN302146	35538	71722	SHA101558			
11416	47600	BCE104951	23478	59662	KPN302148	35539	71723	SHA101559			
11417	47601	BCE104962	23479	59663	KPN302154	35540	71724	SHA101561			
11418	47602	BCE104972	23480	59664	KPN302156	35541	71725	SHA101565			
11419	47603	BCE105003	23481	59665	KPN302168	35542	71726	SHA101567			
11420	47604	BCE105004	23482	59666	KPN302173	35543	71727	SHA101569			
11421	47605	BCE105021	23483	59667	KPN302185	35544	71728	SHA101570			
11422	47606	BCE105027	23484	59668	KPN302187	35545	71729	SHA101571			
11423	47607	BCE105039	23485	59669	KPN302190	35546	71730	SHA101572			
11424	47608	BCE105055	23486	59670	KPN302196	35547	71731	SHA101576			
11425	47609	BCE105068	23487	59671	KPN302203	35548	71732	SHA101579			
11426	47610	BCE105100	23488	59672	KPN302207	35549	71733	SHA101580			
11427	47611	BCE105183	23489	59673	KPN302210	35550	71734	SHA101581			
11428	47612	BCE105218	23490	59674	KPN302213	35551	71735	SHA101582			
11429	47613	BCE105254	23491	59675	KPN302215	35552	71736	SHA101585			
11430	47614	BCE105273	23492	59676	KPN302217	35553	71737	SHA101588			
11431	47615	BCE105292	23493	59677	KPN302220	35554	71738	SHA101591			
11432	47616	BCE105311	23494	59678	KPN302225	35555	71739	SHA101593			
11433	47617	BCE105319	23495	59679	KPN302228	35556	71740	SHA101595			
11434	47618	BCE105322	23496	59680	KPN302230	35557	71741	SHA101596			
11435	47619	BCE105324	23497	59681	KPN302234	35558	71742	SHA101597			

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11436	47620	BCE105358	23498	59682	KPN302236	35559	71743	SHA101599
11437	47621	BCE105360	23499	59683	KPN302244	35560	71744	SHA101601
11438	47622	BCE105376	23500	59684	KPN302246	35561	71745	SHA101602
11439	47623	BCE105407	23501	59685	KPN302251	35562	71746	SHA101603
11440	47624	BCE105408	23502	59686	KPN302255	35563	71747	SHA101604
11441	47625	BCE105417	23503	59687	KPN302263	35564	71748	SHA101605
11442	47626	BCE105443	23504	59688	KPN302266	35565	71749	SHA101609
11443	47627	BCE105454	23505	59689	KPN302267	35566	71750	SHA101613
11444	47628	BCE105474	23506	59690	KPN302271	35567	71751	SHA101626
11445	47629	BCE105486	23507	59691	KPN302276	35568	71752	SHA101627
11446	47630	BCE105508	23508	59692	KPN302315	35569	71753	SHA101628
11447	47631	BCE105510	23509	59693	KPN302317	35570	71754	SHA101633
11448	47632	BCE105517	23510	59694	KPN302321	35571	71755	SHA101634
11449	47633	BCE105528	23511	59695	KPN302322	35572	71756	SHA101635
11450	47634	BCE105553	23512	59696	KPN302324	35573	71757	SHA101636
11451	47635	BCE105561	23513	59697	KPN302325	35574	71758	SHA101637
11452	47636	BCE105566	23514	59698	KPN302330	35575	71759	SHA101640
11453	47637	BCE105570	23515	59699	KPN302345	35576	71760	SHA101643
11454	47638	BCE105583	23516	59700	KPN302349	35577	71761	SHA101646
11455	47639	BCE105592	23517	59701	KPN302355	35578	71762	SHA101649
11456	47640	BCE105599	23518	59702	KPN302356	35579	71763	SHA101651
11457	47641	BCE105610	23519	59703	KPN302365	35580	71764	SHA101653
11458	47642	BCE105647	23520	59704	KPN302368	35581	71765	SHA101656
11459	47643	BCE105651	23521	59705	KPN302369	35582	71766	SHA101666
11460	47644	BCE105657	23522	59706	KPN302385	35583	71767	SHA101671
11461	47645	BCE105663	23523	59707	KPN302393	35584	71768	SHA101672
11462	47646	BCE105683	23524	59708	KPN302399	35585	71769	SHA101673
11463	47647	BCE105684	23525	59709	KPN302400	35586	71770	SHA101674
11464	47648	BCE105704	23526	59710	KPN302401	35587	71771	SHA101679
11465	47649	BCE105719	23527	59711	KPN302405	35588	71772	SHA101681
11466	47650	BCE105745	23528	59712	KPN302422	35589	71773	SHA101682
11467	47651	BCE105757	23529	59713	KPN302433	35590	71774	SHA101684
11468	47652	BCE105760	23530	59714	KPN302436	35591	71775	SHA101687
11469	47653	BCE105792	23531	59715	KPN302455	35592	71776	SHA101690
11470	47654	BCE105851	23532	59716	KPN302468	35593	71777	SHA101691
11471	47655	BCE105897	23533	59717	KPN302470	35594	71778	SHA101692
11472	47656	BCE105915	23534	59718	KPN302471	35595	71779	SHA101696
11473	47657	BCE105916	23535	59719	KPN302473	35596	71780	SHA101700
11474	47658	BCE105922	23536	59720	KPN302476	35597	71781	SHA101701
11475	47659	BCE105925	23537	59721	KPN302483	35598	71782	SHA101704
11476	47660	BCE105937	23538	59722	KPN302484	35599	71783	SHA101705
11477	47661	BCE105952	23539	59723	KPN302487	35600	71784	SHA101706
11478	47662	BCE105957	23540	59724	KPN302503	35601	71785	SHA101707
11479	47663	BCE105965	23541	59725	KPN302507	35602	71786	SHA101719
11480	47664	BCE105983	23542	59726	KPN302510	35603	71787	SHA101724
11481	47665	BCE105992	23543	59727	KPN302511	35604	71788	SHA101725
11482	47666	BCE105994	23544	59728	KPN302512	35605	71789	SHA101737
11483	47667	BCE106023	23545	59729	KPN302515	35606	71790	SHA101738
11484	47668	BCE106024	23546	59730	KPN302517	35607	71791	SHA101739
11485	47669	BCE106056	23547	59731	KPN302520	35608	71792	SHA101741
11486	47670	BCE106065	23548	59732	KPN302522	35609	71793	SHA101742
11487	47671	BCE106082	23549	59733	KPN302526	35610	71794	SHA101743
11488	47672	BCE106087	23550	59734	KPN302527	35611	71795	SHA101749
11489	47673	BCE106124	23551	59735	KPN302540	35612	71796	SHA101753
11490	47674	BCE106127	23552	59736	KPN302541	35613	71797	SHA101761

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11491	47675	BCE106131	23553	59737	KPN302542	35614	71798	SHA101762
11492	47676	BCE106163	23554	59738	KPN302547	35615	71799	SHA101765
11493	47677	BCE106172	23555	59739	KPN302551	35616	71800	SHA101766
11494	47678	BCE106179	23556	59740	KPN302556	35617	71801	SHA101771
11495	47679	BCE106184	23557	59741	KPN302561	35618	71802	SHA101775
11496	47680	BCE106187	23558	59742	KPN302568	35619	71803	SHA101777
11497	47681	BCE106205	23559	59743	KPN302573	35620	71804	SHA101788
11498	47682	BCE106238	23560	59744	KPN302575	35621	71805	SHA101790
11499	47683	BCE106244	23561	59745	KPN302576	35622	71806	SHA101796
11500	47684	BCE106246	23562	59746	KPN302583	35623	71807	SHA101810
11501	47685	BCE106256	23563	59747	KPN302587	35624	71808	SHA101818
11502	47686	BCE106262	23564	59748	KPN302588	35625	71809	SHA101827
11503	47687	BCE106326	23565	59749	KPN302590	35626	71810	SHA101832
11504	47688	BCE106333	23566	59750	KPN302592	35627	71811	SHA101835
11505	47689	BCE106339	23567	59751	KPN302593	35628	71812	SHA101837
11506	47690	BCE106341	23568	59752	KPN302594	35629	71813	SHA101838
11507	47691	BCE106343	23569	59753	KPN302598	35630	71814	SHA101846
11508	47692	BCE106345	23570	59754	KPN302601	35631	71815	SHA101847
11509	47693	BCE106359	23571	59755	KPN302602	35632	71816	SHA101854
11510	47694	BCE106362	23572	59756	KPN302605	35633	71817	SHA101855
11511	47695	BCE106431	23573	59757	KPN302607	35634	71818	SHA101864
11512	47696	BCE106437	23574	59758	KPN302611	35635	71819	SHA101869
11513	47697	BCE106451	23575	59759	KPN302620	35636	71820	SHA101870
11514	47698	BCE106489	23576	59760	KPN302625	35637	71821	SHA101871
11515	47699	BCE106496	23577	59761	KPN302628	35638	71822	SHA101874
11516	47700	BCE106500	23578	59762	KPN302635	35639	71823	SHA101878
11517	47701	BCE106510	23579	59763	KPN302648	35640	71824	SHA101896
11518	47702	BCE106511	23580	59764	KPN302658	35641	71825	SHA101897
11519	47703	BCE106540	23581	59765	KPN302668	35642	71826	SHA101900
11520	47704	BCE106577	23582	59766	KPN302671	35643	71827	SHA101901
11521	47705	BCE106581	23583	59767	KPN302673	35644	71828	SHA101903
11522	47706	BCE106620	23584	59768	KPN302676	35645	71829	SHA101905
11523	47707	BCE106651	23585	59769	KPN302684	35646	71830	SHA101910
11524	47708	BCE106664	23586	59770	KPN302685	35647	71831	SHA101916
11525	47709	BCE106666	23587	59771	KPN302688	35648	71832	SHA101917
11526	47710	BCE106677	23588	59772	KPN302693	35649	71833	SHA101918
11527	47711	BCE106700	23589	59773	KPN302701	35650	71834	SHA101919
11528	47712	BCE106716	23590	59774	KPN302708	35651	71835	SHA101930
11529	47713	BCE106766	23591	59775	KPN302711	35652	71836	SHA101932
11530	47714	BCE106802	23592	59776	KPN302715	35653	71837	SHA101939
11531	47715	BCE106818	23593	59777	KPN302720	35654	71838	SHA101943
11532	47716	BCE106878	23594	59778	KPN302739	35655	71839	SHA101955
11533	47717	BCE106900	23595	59779	KPN302744	35656	71840	SHA101961
11534	47718	BCE106919	23596	59780	KPN302747	35657	71841	SHA101965
11535	47719	BCE106925	23597	59781	KPN302749	35658	71842	SHA101967
11536	47720	BCE106939	23598	59782	KPN302752	35659	71843	SHA101969
11537	47721	BCE106941	23599	59783	KPN302758	35660	71844	SHA101974
11538	47722	BCE106968	23600	59784	KPN302759	35661	71845	SHA101980
11539	47723	BCE106981	23601	59785	KPN302777	35662	71846	SHA101983
11540	47724	BCE107000	23602	59786	KPN302783	35663	71847	SHA101990
11541	47725	BCE107002	23603	59787	KPN302790	35664	71848	SHA101993
11542	47726	BCE107003	23604	59788	KPN302795	35665	71849	SHA101994
11543	47727	BCE107013	23605	59789	KPN302797	35666	71850	SHA102001
11544	47728	BCE107019	23606	59790	KPN302800	35667	71851	SHA102002
11545	47729	BCE107035	23607	59791	KPN302804	35668	71852	SHA102003

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11546	47730	BCE107041	23608	59792	KPN302806	35669	71853	SHA102006
11547	47731	BCE107050	23609	59793	KPN302808	35670	71854	SHA102007
11548	47732	BCE107064	23610	59794	KPN302809	35671	71855	SHA102011
11549	47733	BCE107071	23611	59795	KPN302810	35672	71856	SHA102018
11550	47734	BCE107083	23612	59796	KPN302817	35673	71857	SHA102019
11551	47735	BCE107096	23613	59797	KPN302822	35674	71858	SHA102021
11552	47736	BCE107115	23614	59798	KPN302831	35675	71859	SHA102022
11553	47737	BCE107126	23615	59799	KPN302833	35676	71860	SHA102023
11554	47738	BCE107136	23616	59800	KPN302836	35677	71861	SHA102024
11555	47739	BCE107142	23617	59801	KPN302840	35678	71862	SHA102028
11556	47740	BCE107211	23618	59802	KPN302841	35679	71863	SHA102031
11557	47741	BCE107218	23619	59803	KPN302863	35680	71864	SHA102033
11558	47742	BCE107273	23620	59804	KPN302864	35681	71865	SHA102036
11559	47743	BCE107277	23621	59805	KPN302865	35682	71866	SHA102040
11560	47744	BCE107288	23622	59806	KPN302879	35683	71867	SHA102044
11561	47745	BCE107290	23623	59807	KPN302890	35684	71868	SHA102047
11562	47746	BCE107302	23624	59808	KPN302908	35685	71869	SHA102048
11563	47747	BCE107311	23625	59809	KPN302911	35686	71870	SHA102049
11564	47748	BCE107325	23626	59810	KPN302916	35687	71871	SHA102072
11565	47749	BCE107342	23627	59811	KPN302924	35688	71872	SHA102078
11566	47750	BCE107345	23628	59812	KPN302939	35689	71873	SHA102088
11567	47751	BCE107353	23629	59813	KPN302944	35690	71874	SHA102089
11568	47752	BCE107363	23630	59814	KPN302949	35691	71875	SHA102097
11569	47753	BCE107366	23631	59815	KPN302952	35692	71876	SHA102099
11570	47754	BCE107415	23632	59816	KPN302957	35693	71877	SHA102124
11571	47755	BCE107416	23633	59817	KPN302967	35694	71878	SHA102128
11572	47756	BCE107431	23634	59818	KPN302968	35695	71879	SHA102129
11573	47757	BCE107448	23635	59819	KPN302981	35696	71880	SHA102130
11574	47758	BCE107483	23636	59820	KPN302997	35697	71881	SHA102132
11575	47759	BCE107484	23637	59821	KPN303003	35698	71882	SHA102134
11576	47760	BCE107495	23638	59822	KPN303005	35699	71883	SHA102135
11577	47761	BCE107496	23639	59823	KPN303031	35700	71884	SHA102145
11578	47762	BCE107511	23640	59824	KPN303040	35701	71885	SHA102148
11579	47763	BCE107517	23641	59825	KPN303047	35702	71886	SHA102150
11580	47764	BCE107531	23642	59826	KPN303050	35703	71887	SHA102153
11581	47765	BCE107538	23643	59827	KPN303051	35704	71888	SHA102155
11582	47766	BCE107571	23644	59828	KPN303054	35705	71889	SHA102166
11583	47767	BCE107575	23645	59829	KPN303056	35706	71890	SHA102188
11584	47768	BCE107576	23646	59830	KPN303058	35707	71891	SHA102191
11585	47769	BCE107587	23647	59831	KPN303060	35708	71892	SHA102193
11586	47770	BCE107605	23648	59832	KPN303068	35709	71893	SHA102199
11587	47771	BCE107623	23649	59833	KPN303070	35710	71894	SHA102201
11588	47772	BCE107626	23650	59834	KPN303072	35711	71895	SHA102213
11589	47773	BCE107637	23651	59835	KPN303075	35712	71896	SHA102214
11590	47774	BCE107642	23652	59836	KPN303078	35713	71897	SHA102216
11591	47775	BCE107667	23653	59837	KPN303095	35714	71898	SHA102217
11592	47776	BCE107676	23654	59838	KPN303098	35715	71899	SHA102218
11593	47777	BCE107682	23655	59839	KPN303099	35716	71900	SHA102220
11594	47778	BCE107689	23656	59840	KPN303110	35717	71901	SHA102221
11595	47779	BCE107697	23657	59841	KPN303112	35718	71902	SHA102223
11596	47780	BCE107702	23658	59842	KPN303124	35719	71903	SHA102232
11597	47781	BCE107711	23659	59843	KPN303125	35720	71904	SHA102241
11598	47782	BCE107747	23660	59844	KPN303133	35721	71905	SHA102245
11599	47783	BCE107754	23661	59845	KPN303134	35722	71906	SHA102248
11600	47784	BCE107762	23662	59846	KPN303135	35723	71907	SHA102255

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11601	47785	BCE107805	23663	59847	KPN303137	35724	71908	SHA102256
11602	47786	BCE107836	23664	59848	KPN303138	35725	71909	SHA102259
11603	47787	BCE107845	23665	59849	KPN303140	35726	71910	SHA102260
11604	47788	BCE107846	23666	59850	KPN303149	35727	71911	SHA102263
11605	47789	BCE107847	23667	59851	KPN303155	35728	71912	SHA102268
11606	47790	BCE107854	23668	59852	KPN303170	35729	71913	SHA102269
11607	47791	BCE107881	23669	59853	KPN303175	35730	71914	SHA102270
11608	47792	BCE107896	23670	59854	KPN303186	35731	71915	SHA102271
11609	47793	BCE107905	23671	59855	KPN303187	35732	71916	SHA102287
11610	47794	BCE107987	23672	59856	KPN303215	35733	71917	SHA102289
11611	47795	BCE107990	23673	59857	KPN303224	35734	71918	SHA102295
11612	47796	BCE107994	23674	59858	KPN303236	35735	71919	SHA102314
11613	47797	BCE108020	23675	59859	KPN303238	35736	71920	SHA102331
11614	47798	BCE108025	23676	59860	KPN303260	35737	71921	SHA102341
11615	47799	BCE108028	23677	59861	KPN303262	35738	71922	SHA102342
11616	47800	BCE108051	23678	59862	KPN303263	35739	71923	SHA102361
11617	47801	BCE108053	23679	59863	KPN303268	35740	71924	SHA102365
11618	47802	BCE108067	23680	59864	KPN303278	35741	71925	SHA102369
11619	47803	BCE108070	23681	59865	KPN303293	35742	71926	SHA102370
11620	47804	BCE108074	23682	59866	KPN303298	35743	71927	SHA102372
11621	47805	BCE108109	23683	59867	KPN303306	35744	71928	SHA102380
11622	47806	BCE108121	23684	59868	KPN303307	35745	71929	SHA102381
11623	47807	BCE108130	23685	59869	KPN303312	35746	71930	SHA102393
11624	47808	BCE108135	23686	59870	KPN303317	35747	71931	SHA102394
11625	47809	BCE108192	23687	59871	KPN303319	35748	71932	SHA102397
11626	47810	BCE108240	23688	59872	KPN303321	35749	71933	SHA102409
11627	47811	BCE108241	23689	59873	KPN303323	35750	71934	SHA102423
11628	47812	BCE108256	23690	59874	KPN303324	35751	71935	SHA102434
11629	47813	BCE108257	23691	59875	KPN303337	35752	71936	SHA102439
11630	47814	BCE108299	23692	59876	KPN303338	35753	71937	SHA102445
11631	47815	BCE108358	23693	59877	KPN303342	35754	71938	SHA102447
11632	47816	BCE108394	23694	59878	KPN303344	35755	71939	SHA102448
11633	47817	BCE108487	23695	59879	KPN303346	35756	71940	SHA102491
11634	47818	BCE108504	23696	59880	KPN303348	35757	71941	SHA102495
11635	47819	BCE108518	23697	59881	KPN303362	35758	71942	SHA102497
11636	47820	BCE108533	23698	59882	KPN303365	35759	71943	SHA102499
11637	47821	BCE108544	23699	59883	KPN303367	35760	71944	SHA102504
11638	47822	BCE108546	23700	59884	KPN303368	35761	71945	SHA102510
11639	47823	BCE108622	23701	59885	KPN303370	35762	71946	SHA102513
11640	47824	BCE108649	23702	59886	KPN303383	35763	71947	SHA102514
11641	47825	BCE108668	23703	59887	KPN303387	35764	71948	SHA102516
11642	47826	BCE108675	23704	59888	KPN303388	35765	71949	SHA102517
11643	47827	BCE108686	23705	59889	KPN303391	35766	71950	SHA102521
11644	47828	BCE108691	23706	59890	KPN303392	35767	71951	SHA102530
11645	47829	BCE108701	23707	59891	KPN303397	35768	71952	SHA102541
11646	47830	BCE108719	23708	59892	KPN303398	35769	71953	SHA102554
11647	47831	BCE108732	23709	59893	KPN303402	35770	71954	SHA102568
11648	47832	BCE108743	23710	59894	KPN303405	35771	71955	SHA102575
11649	47833	BCE108751	23711	59895	KPN303410	35772	71956	SHA102595
11650	47834	BCE108786	23712	59896	KPN303418	35773	71957	SHA102644
11651	47835	BCE108792	23713	59897	KPN303419	35774	71958	SHA102651
11652	47836	BCE108815	23714	59898	KPN303422	35775	71959	SHA102654
11653	47837	BCE108826	23715	59899	KPN303429	35776	71960	SHA102676
11654	47838	BCE108874	23716	59900	KPN303432	35777	71961	SHA102684
11655	47839	BCE108880	23717	59901	KPN303442	35778	71962	SHA102688

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11656	47840	BCE108881	23718	59902	KPN303443	35779	71963	SHA102705
11657	47841	BCE108906	23719	59903	KPN303447	35780	71964	SHA102710
11658	47842	BCE108946	23720	59904	KPN303448	35781	71965	SHA102720
11659	47843	BCE108968	23721	59905	KPN303462	35782	71966	SHA102731
11660	47844	BCE108969	23722	59906	KPN303463	35783	71967	SHA102750
11661	47845	BCE108996	23723	59907	KPN303464	35784	71968	SHA102754
11662	47846	BCE109011	23724	59908	KPN303469	35785	71969	SHA102755
11663	47847	BCE109015	23725	59909	KPN303475	35786	71970	SHA102778
11664	47848	BCE109039	23726	59910	KPN303478	35787	71971	SHA102781
11665	47849	BCE109062	23727	59911	KPN303481	35788	71972	SHA102804
11666	47850	BCE109097	23728	59912	KPN303484	35789	71973	SHA102806
11667	47851	BCE109104	23729	59913	KPN303485	35790	71974	SHA102814
11668	47852	BCE109138	23730	59914	KPN303487	35791	71975	SHA102823
11669	47853	BCE109200	23731	59915	KPN303489	35792	71976	SHA102824
11670	47854	BCE109201	23732	59916	KPN303490	35793	71977	SHA102842
11671	47855	BCE109231	23733	59917	KPN303509	35794	71978	SHA102843
11672	47856	BCE109235	23734	59918	KPN303511	35795	71979	SHA102846
11673	47857	BCE109237	23735	59919	KPN303513	35796	71980	SHA102869
11674	47858	BCE109252	23736	59920	KPN303514	35797	71981	SHA102882
11675	47859	BCE109254	23737	59921	KPN303516	35798	71982	SHA102890
11676	47860	BCE109277	23738	59922	KPN303520	35799	71983	SHA102895
11677	47861	BCE109299	23739	59923	KPN303521	35800	71984	SHA102902
11678	47862	BCE109316	23740	59924	KPN303530	35801	71985	SHA102912
11679	47863	BCE109317	23741	59925	KPN303531	35802	71986	SHA102938
11680	47864	BCE109327	23742	59926	KPN303535	35803	71987	SHA102966
11681	47865	BCE109344	23743	59927	KPN303537	35804	71988	SHA102983
11682	47866	BCE109390	23744	59928	KPN303539	35805	71989	SHA102996
11683	47867	BCE109396	23745	59929	KPN303551	35806	71990	SHA102998
11684	47868	BCE109401	23746	59930	KPN303559	35807	71991	SHA103018
11685	47869	BCE109402	23747	59931	KPN303560	35808	71992	SHA103035
11686	47870	BCE109420	23748	59932	KPN303566	35809	71993	SHA103066
11687	47871	BCE109423	23749	59933	KPN303577	35810	71994	SHA103074
11688	47872	BCE109431	23750	59934	KPN303579	35811	71995	SHA103119
11689	47873	BCE109436	23751	59935	KPN303581	35812	71996	SHA103167
11690	47874	BCE109463	23752	59936	KPN303589	35813	71997	SHA103168
11691	47875	BCE109468	23753	59937	KPN303592	35814	71998	SHA103188
11692	47876	BCE109471	23754	59938	KPN303595	35815	71999	SHA103189
11693	47877	BCE109489	23755	59939	KPN303596	35816	72000	SHA103193
11694	47878	BCE109504	23756	59940	KPN303620	35817	72001	SHA103204
11695	47879	BCE109512	23757	59941	KPN303632	35818	72002	SHA103206
11696	47880	BCE109516	23758	59942	KPN303648	35819	72003	SHA103208
11697	47881	BCE109527	23759	59943	KPN303650	35820	72004	SHA103225
11698	47882	BCE109535	23760	59944	KPN303651	35821	72005	SHA103272
11699	47883	BCE109548	23761	59945	KPN303658	35822	72006	SHA103279
11700	47884	BCE109553	23762	59946	KPN303671	35823	72007	SHA103321
11701	47885	BCE109557	23763	59947	KPN303693	35824	72008	SHA103355
11702	47886	BCE109617	23764	59948	KPN303709	35825	72009	SHA103377
11703	47887	BCE109619	23765	59949	KPN303711	35826	72010	SHA103379
11704	47888	BCE109623	23766	59950	KPN303718	35827	72011	SMU100002
11705	47889	BCE109663	23767	59951	KPN303720	35828	72012	SMU100004
11706	47890	BCE109710	23768	59952	KPN303726	35829	72013	SMU100011
11707	47891	BCE109741	23769	59953	KPN303729	35830	72014	SMU100019
11708	47892	BCE109750	23770	59954	KPN303732	35831	72015	SMU100022
11709	47893	BCE109754	23771	59955	KPN303779	35832	72016	SMU100024
11710	47894	BCE109755	23772	59956	KPN303781	35833	72017	SMU100027

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11711	47895	BCE109760	23773	59957	KPN303784	35834	72018	SMU100028
11712	47896	BCE109764	23774	59958	KPN303792	35835	72019	SMU100029
11713	47897	BCE109774	23775	59959	KPN303796	35836	72020	SMU100030
11714	47898	BCE109815	23776	59960	KPN303797	35837	72021	SMU100032
11715	47899	BCE109830	23777	59961	KPN303807	35838	72022	SMU100033
11716	47900	BCE109833	23778	59962	KPN303808	35839	72023	SMU100034
11717	47901	BCE109854	23779	59963	KPN303809	35840	72024	SMU100045
11718	47902	BCE109876	23780	59964	KPN303823	35841	72025	SMU100046
11719	47903	BCE109890	23781	59965	KPN303830	35842	72026	SMU100047
11720	47904	BCE109900	23782	59966	KPN303846	35843	72027	SMU100048
11721	47905	BCE109906	23783	59967	KPN303853	35844	72028	SMU100051
11722	47906	BCE109908	23784	59968	KPN303856	35845	72029	SMU100056
11723	47907	BCE109909	23785	59969	KPN303861	35846	72030	SMU100062
11724	47908	BCE109919	23786	59970	KPN303864	35847	72031	SMU100063
11725	47909	BCE109927	23787	59971	KPN303865	35848	72032	SMU100064
11726	47910	BCE109939	23788	59972	KPN303867	35849	72033	SMU100069
11727	47911	BCE109946	23789	59973	KPN303880	35850	72034	SMU100070
11728	47912	BCE109984	23790	59974	KPN303881	35851	72035	SMU100072
11729	47913	BCE110035	23791	59975	KPN303886	35852	72036	SMU100073
11730	47914	BCE110046	23792	59976	KPN303887	35853	72037	SMU100076
11731	47915	BCE110053	23793	59977	KPN303890	35854	72038	SMU100078
11732	47916	BCE110085	23794	59978	KPN303892	35855	72039	SMU100079
11733	47917	BCE110115	23795	59979	KPN303893	35856	72040	SMU100080
11734	47918	BCE110120	23796	59980	KPN303900	35857	72041	SMU100081
11735	47919	BCE110171	23797	59981	KPN303902	35858	72042	SMU100082
11736	47920	BCE110175	23798	59982	KPN303904	35859	72043	SMU100083
11737	47921	BCE110191	23799	59983	KPN303919	35860	72044	SMU100084
11738	47922	BCE110197	23800	59984	KPN303925	35861	72045	SMU100085
11739	47923	BCE110211	23801	59985	KPN303932	35862	72046	SMU100089
11740	47924	BCE110252	23802	59986	KPN303934	35863	72047	SMU100090
11741	47925	BCE110254	23803	59987	KPN303958	35864	72048	SMU100093
11742	47926	BCE110276	23804	59988	KPN303963	35865	72049	SMU100094
11743	47927	BCE110334	23805	59989	KPN303965	35866	72050	SMU100097
11744	47928	BCE110352	23806	59990	KPN303969	35867	72051	SMU100098
11745	47929	BCE110353	23807	59991	KPN303987	35868	72052	SMU100101
11746	47930	BCE110366	23808	59992	KPN303993	35869	72053	SMU100104
11747	47931	BCE110367	23809	59993	KPN303997	35870	72054	SMU100106
11748	47932	BCE110368	23810	59994	KPN303998	35871	72055	SMU100109
11749	47933	BCE110380	23811	59995	KPN304015	35872	72056	SMU100110
11750	47934	BCE110397	23812	59996	KPN304017	35873	72057	SMU100116
11751	47935	BCE110408	23813	59997	KPN304022	35874	72058	SMU100120
11752	47936	BCE110410	23814	59998	KPN304023	35875	72059	SMU100122
11753	47937	BCE110418	23815	59999	KPN304036	35876	72060	SMU100125
11754	47938	BCE110439	23816	60000	KPN304048	35877	72061	SMU100127
11755	47939	BCE110445	23817	60001	KPN304056	35878	72062	SMU100130
11756	47940	BCE110446	23818	60002	KPN304071	35879	72063	SMU100131
11757	47941	BCE110467	23819	60003	KPN304077	35880	72064	SMU100140
11758	47942	BCE110476	23820	60004	KPN304083	35881	72065	SMU100141
11759	47943	BCE110485	23821	60005	KPN304100	35882	72066	SMU100142
11760	47944	BCE110494	23822	60006	KPN304106	35883	72067	SMU100150
11761	47945	BCE110533	23823	60007	KPN304109	35884	72068	SMU100152
11762	47946	BCE110535	23824	60008	KPN304125	35885	72069	SMU100153
11763	47947	BCE110544	23825	60009	KPN304128	35886	72070	SMU100154
11764	47948	BCE110567	23826	60010	KPN304132	35887	72071	SMU100160
11765	47949	BCE110576	23827	60011	KPN304180	35888	72072	SMU100161

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11766	47950	BCE110581	23828	60012	KPN304182	35889	72073	SMU100170
11767	47951	BCE110592	23829	60013	KPN304185	35890	72074	SMU100171
11768	47952	BCE110599	23830	60014	KPN304195	35891	72075	SMU100172
11769	47953	BCE110600	23831	60015	KPN304202	35892	72076	SMU100176
11770	47954	BCE110602	23832	60016	KPN304206	35893	72077	SMU100179
11771	47955	BCE110618	23833	60017	KPN304208	35894	72078	SMU100183
11772	47956	BCE110619	23834	60018	KPN304210	35895	72079	SMU100190
11773	47957	BCE110623	23835	60019	KPN304212	35896	72080	SMU100191
11774	47958	BCE110631	23836	60020	KPN304213	35897	72081	SMU100200
11775	47959	BCE110636	23837	60021	KPN304221	35898	72082	SMU100210
11776	47960	BCE110660	23838	60022	KPN304223	35899	72083	SMU100212
11777	47961	BCE110669	23839	60023	KPN304247	35900	72084	SMU100213
11778	47962	BCE110670	23840	60024	KPN304250	35901	72085	SMU100215
11779	47963	BCE110691	23841	60025	KPN304258	35902	72086	SMU100219
11780	47964	BCE110714	23842	60026	KPN304259	35903	72087	SMU100221
11781	47965	BCE110744	23843	60027	KPN304271	35904	72088	SMU100226
11782	47966	BCE110764	23844	60028	KPN304272	35905	72089	SMU100230
11783	47967	BCE110777	23845	60029	KPN304278	35906	72090	SMU100238
11784	47968	BCE110810	23846	60030	KPN304291	35907	72091	SMU100239
11785	47969	BCE110834	23847	60031	KPN304293	35908	72092	SMU100247
11786	47970	BCE110873	23848	60032	KPN304355	35909	72093	SMU100253
11787	47971	BCE110975	23849	60033	KPN304370	35910	72094	SMU100254
11788	47972	BCE110976	23850	60034	KPN304382	35911	72095	SMU100255
11789	47973	BCE110991	23851	60035	KPN304386	35912	72096	SMU100257
11790	47974	BCE111009	23852	60036	KPN304388	35913	72097	SMU100269
11791	47975	BCE111018	23853	60037	KPN304389	35914	72098	SMU100271
11792	47976	BCE111047	23854	60038	KPN304402	35915	72099	SMU100284
11793	47977	BCE111053	23855	60039	KPN304405	35916	72100	SMU100292
11794	47978	BCE111066	23856	60040	KPN304418	35917	72101	SMU100294
11795	47979	BCE111071	23857	60041	KPN304419	35918	72102	SMU100295
11796	47980	BCE111090	23858	60042	KPN304430	35919	72103	SMU100298
11797	47981	BCE111113	23859	60043	KPN304436	35920	72104	SMU100300
11798	47982	BCE111148	23860	60044	KPN304448	35921	72105	SMU100302
11799	47983	BCE111154	23861	60045	KPN304450	35922	72106	SMU100303
11800	47984	BCE111163	23862	60046	KPN304452	35923	72107	SMU100305
11801	47985	BCE111166	23863	60047	KPN304473	35924	72108	SMU100307
11802	47986	BCE111202	23864	60048	KPN304474	35925	72109	SMU100308
11803	47987	BCE111221	23865	60049	KPN304482	35926	72110	SMU100310
11804	47988	BCE111238	23866	60050	KPN304484	35927	72111	SMU100311
11805	47989	BCE111259	23867	60051	KPN304485	35928	72112	SMU100315
11806	47990	BCE111262	23868	60052	KPN304492	35929	72113	SMU100316
11807	47991	BCE111281	23869	60053	KPN304497	35930	72114	SMU100318
11808	47992	BCE111288	23870	60054	KPN304517	35931	72115	SMU100319
11809	47993	BCE111292	23871	60055	KPN304521	35932	72116	SMU100320
11810	47994	BCE111297	23872	60056	KPN304528	35933	72117	SMU100321
11811	47995	BCE111308	23873	60057	KPN304537	35934	72118	SMU100322
11812	47996	BCE111312	23874	60058	KPN304546	35935	72119	SMU100325
11813	47997	BCE111317	23875	60059	KPN304553	35936	72120	SMU100328
11814	47998	BCE111319	23876	60060	KPN304564	35937	72121	SMU100332
11815	47999	BCE111329	23877	60061	KPN304595	35938	72122	SMU100333
11816	48000	BCE111382	23878	60062	KPN304604	35939	72123	SMU100344
11817	48001	BCE111388	23879	60063	KPN304631	35940	72124	SMU100347
11818	48002	BCE111406	23880	60064	KPN304657	35941	72125	SMU100348
11819	48003	BCE111412	23881	60065	KPN304658	35942	72126	SMU100349
11820	48004	BCE111433	23882	60066	KPN304660	35943	72127	SMU100354

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11821	48005	BCE111438	23883	60067	KPN304684	35944	72128	SMU100356
11822	48006	BCE111450	23884	60068	KPN304697	35945	72129	SMU100357
11823	48007	BCE111462	23885	60069	KPN304707	35946	72130	SMU100374
11824	48008	BCE111466	23886	60070	KPN304708	35947	72131	SMU100380
11825	48009	BCE111505	23887	60071	KPN304710	35948	72132	SMU100382
11826	48010	BCE111516	23888	60072	KPN304718	35949	72133	SMU100383
11827	48011	BCE111521	23889	60073	KPN304723	35950	72134	SMU100385
11828	48012	BCE111542	23890	60074	KPN304726	35951	72135	SMU100386
11829	48013	BCE111561	23891	60075	KPN304736	35952	72136	SMU100397
11830	48014	BCE111566	23892	60076	KPN304742	35953	72137	SMU100405
11831	48015	BCE111625	23893	60077	KPN304755	35954	72138	SMU100407
11832	48016	BCE111630	23894	60078	KPN304763	35955	72139	SMU100418
11833	48017	BCE111633	23895	60079	KPN304764	35956	72140	SMU100422
11834	48018	BCE111641	23896	60080	KPN304792	35957	72141	SMU100436
11835	48019	BCE111648	23897	60081	KPN304804	35958	72142	SMU100438
11836	48020	BCE111669	23898	60082	KPN304811	35959	72143	SMU100441
11837	48021	BCE111670	23899	60083	KPN304817	35960	72144	SMU100446
11838	48022	BCE111817	23900	60084	KPN304825	35961	72145	SMU100447
11839	48023	BCE111825	23901	60085	KPN304828	35962	72146	SMU100449
11840	48024	BCE111852	23902	60086	KPN304829	35963	72147	SMU100452
11841	48025	BCE111853	23903	60087	KPN304841	35964	72148	SMU100454
11842	48026	BCE111864	23904	60088	KPN304842	35965	72149	SMU100455
11843	48027	BCE111871	23905	60089	KPN304852	35966	72150	SMU100459
11844	48028	BCE111873	23906	60090	KPN304856	35967	72151	SMU100460
11845	48029	BCE111898	23907	60091	KPN304858	35968	72152	SMU100461
11846	48030	BCE111918	23908	60092	KPN304876	35969	72153	SMU100467
11847	48031	BCE111932	23909	60093	KPN304881	35970	72154	SMU100469
11848	48032	BCE111947	23910	60094	KPN304901	35971	72155	SMU100470
11849	48033	BCE111951	23911	60095	KPN304908	35972	72156	SMU100471
11850	48034	BCE111953	23912	60096	KPN304909	35973	72157	SMU100476
11851	48035	BCE111954	23913	60097	KPN304910	35974	72158	SMU100477
11852	48036	BCE111959	23914	60098	KPN304911	35975	72159	SMU100479
11853	48037	BCE111963	23915	60099	KPN304917	35976	72160	SMU100480
11854	48038	BCE111976	23916	60100	KPN304932	35977	72161	SMU100483
11855	48039	BCE111986	23917	60101	KPN304960	35978	72162	SMU100484
11856	48040	BCE112007	23918	60102	KPN304964	35979	72163	SMU100485
11857	48041	BCE112030	23919	60103	KPN304983	35980	72164	SMU100488
11858	48042	BCE112085	23920	60104	KPN304984	35981	72165	SMU100489
11859	48043	BCE112105	23921	60105	KPN304985	35982	72166	SMU100491
11860	48044	BCE112144	23922	60106	KPN304995	35983	72167	SMU100492
11861	48045	BCE112162	23923	60107	KPN304998	35984	72168	SMU100494
11862	48046	BCE112176	23924	60108	KPN305000	35985	72169	SMU100495
11863	48047	BCE112181	23925	60109	KPN305001	35986	72170	SMU100503
11864	48048	BCE112211	23926	60110	KPN305008	35987	72171	SMU100505
11865	48049	BCE112214	23927	60111	KPN305016	35988	72172	SMU100506
11866	48050	BCE112269	23928	60112	KPN305017	35989	72173	SMU100507
11867	48051	BCE112288	23929	60113	KPN305021	35990	72174	SMU100510
11868	48052	BCE112311	23930	60114	KPN305026	35991	72175	SMU100515
11869	48053	BCE112329	23931	60115	KPN305038	35992	72176	SMU100517
11870	48054	BCE112346	23932	60116	KPN305053	35993	72177	SMU100518
11871	48055	BCE112364	23933	60117	KPN305062	35994	72178	SMU100522
11872	48056	BCE112411	23934	60118	KPN305068	35995	72179	SMU100523
11873	48057	BCE112448	23935	60119	KPN305069	35996	72180	SMU100529
11874	48058	BCE112456	23936	60120	KPN305071	35997	72181	SMU100531
11875	48059	BCE112466	23937	60121	KPN305078	35998	72182	SMU100533

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11876	48060	BCE112521	23938	60122	KPN305086	35999	72183	SMU100534
11877	48061	BCE112542	23939	60123	KPN305112	36000	72184	SMU100535
11878	48062	BCE112553	23940	60124	KPN305114	36001	72185	SMU100537
11879	48063	BCE112587	23941	60125	KPN305124	36002	72186	SMU100539
11880	48064	BCE112594	23942	60126	KPN305142	36003	72187	SMU100541
11881	48065	BCE112635	23943	60127	KPN305143	36004	72188	SMU100543
11882	48066	BCE112641	23944	60128	KPN305144	36005	72189	SMU100545
11883	48067	BCE112651	23945	60129	KPN305145	36006	72190	SMU100546
11884	48068	BCE112661	23946	60130	KPN305146	36007	72191	SMU100547
11885	48069	BCE112663	23947	60131	KPN305150	36008	72192	SMU100549
11886	48070	BCE112681	23948	60132	KPN305161	36009	72193	SMU100552
11887	48071	BCE112705	23949	60133	KPN305163	36010	72194	SMU100553
11888	48072	BCE112712	23950	60134	KPN305176	36011	72195	SMU100555
11889	48073	BCE112713	23951	60135	KPN305177	36012	72196	SMU100556
11890	48074	BCE112720	23952	60136	KPN305190	36013	72197	SMU100562
11891	48075	BCE112739	23953	60137	KPN305221	36014	72198	SMU100576
11892	48076	BCE112765	23954	60138	KPN305262	36015	72199	SMU100577
11893	48077	BCE112767	23955	60139	KPN305265	36016	72200	SMU100578
11894	48078	BCE112791	23956	60140	KPN305274	36017	72201	SMU100583
11895	48079	BCE112795	23957	60141	KPN305280	36018	72202	SMU100584
11896	48080	BCE112818	23958	60142	KPN305282	36019	72203	SMU100586
11897	48081	BCE112820	23959	60143	KPN305294	36020	72204	SMU100587
11898	48082	BCE112831	23960	60144	KPN305296	36021	72205	SMU100588
11899	48083	BCE112863	23961	60145	KPN305315	36022	72206	SMU100590
11900	48084	BCE112884	23962	60146	KPN305340	36023	72207	SMU100592
11901	48085	BCE112887	23963	60147	KPN305392	36024	72208	SMU100596
11902	48086	BCE112892	23964	60148	KPN305499	36025	72209	SMU100597
11903	48087	BCE112921	23965	60149	KPN305504	36026	72210	SMU100598
11904	48088	BCE112929	23966	60150	KPN305506	36027	72211	SMU100599
11905	48089	BCE112934	23967	60151	KPN305521	36028	72212	SMU100600
11906	48090	BCE112943	23968	60152	KPN305530	36029	72213	SMU100601
11907	48091	BCE112960	23969	60153	KPN305541	36030	72214	SMU100602
11908	48092	BCE112972	23970	60154	KPN305544	36031	72215	SMU100603
11909	48093	BCE113024	23971	60155	KPN305556	36032	72216	SMU100604
11910	48094	BCE113026	23972	60156	KPN305564	36033	72217	SMU100605
11911	48095	BCE113044	23973	60157	KPN305601	36034	72218	SMU100606
11912	48096	BCE113086	23974	60158	KPN305645	36035	72219	SMU100607
11913	48097	BCE113092	23975	60159	KPN305684	36036	72220	SMU100608
11914	48098	BCE113128	23976	60160	KPN305688	36037	72221	SMU100609
11915	48099	BCE113179	23977	60161	KPN305696	36038	72222	SMU100610
11916	48100	BCE113197	23978	60162	KPN305713	36039	72223	SMU100611
11917	48101	BCE113211	23979	60163	KPN305737	36040	72224	SMU100612
11918	48102	BCE113227	23980	60164	KPN305748	36041	72225	SMU100613
11919	48103	BCE113237	23981	60165	KPN305761	36042	72226	SMU100616
11920	48104	BCE113271	23982	60166	KPN305776	36043	72227	SMU100618
11921	48105	BCE113273	23983	60167	KPN305781	36044	72228	SMU100622
11922	48106	BCE113281	23984	60168	KPN305789	36045	72229	SMU100625
11923	48107	BCE113297	23985	60169	KPN305795	36046	72230	SMU100627
11924	48108	BCE113298	23986	60170	KPN305802	36047	72231	SMU100628
11925	48109	BCE113308	23987	60171	KPN305822	36048	72232	SMU100634
11926	48110	BCE113319	23988	60172	KPN305829	36049	72233	SMU100640
11927	48111	BCE113320	23989	60173	KPN305930	36050	72234	SMU100642
11928	48112	BCE113335	23990	60174	KPN305968	36051	72235	SMU100644
11929	48113	BCE113336	23991	60175	KPN305976	36052	72236	SMU100645
11930	48114	BCE113373	23992	60176	KPN305977	36053	72237	SMU100646

WO 02/077183									PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11931	48115	BCE113381	23993	60177	KPN305983	36054	72238	SMU100648			
11932	48116	BCE113397	23994	60178	KPN305984	36055	72239	SMU100650			
11933	48117	BCE113404	23995	60179	KPN305987	36056	72240	SMU100655			
11934	48118	BCE113410	23996	60180	KPN305997	36057	72241	SMU100656			
11935	48119	BCE113421	23997	60181	KPN306028	36058	72242	SMU100660			
11936	48120	BCE113424	23998	60182	KPN306040	36059	72243	SMU100664			
11937	48121	BCE113428	23999	60183	KPN306050	36060	72244	SMU100665			
11938	48122	BCE113436	24000	60184	KPN306058	36061	72245	SMU100666			
11939	48123	BCE113442	24001	60185	KPN306067	36062	72246	SMU100668			
11940	48124	BCE113462	24002	60186	KPN306069	36063	72247	SMU100669			
11941	48125	BCE113475	24003	60187	KPN306077	36064	72248	SMU100672			
11942	48126	BCE113483	24004	60188	KPN306084	36065	72249	SMU100679			
11943	48127	BCE113494	24005	60189	KPN306125	36066	72250	SMU100680			
11944	48128	BCE113538	24006	60190	KPN306143	36067	72251	SMU100684			
11945	48129	BCE113546	24007	60191	KPN306162	36068	72252	SMU100686			
11946	48130	BCE113547	24008	60192	KPN306163	36069	72253	SMU100688			
11947	48131	BCE113553	24009	60193	KPN306173	36070	72254	SMU100690			
11948	48132	BCE113620	24010	60194	KPN306186	36071	72255	SMU100692			
11949	48133	BCE113660	24011	60195	KPN306198	36072	72256	SMU100694			
11950	48134	BCE113665	24012	60196	KPN306260	36073	72257	SMU100695			
11951	48135	BCE113692	24013	60197	KPN306262	36074	72258	SMU100697			
11952	48136	BCE113703	24014	60198	KPN306295	36075	72259	SMU100699			
11953	48137	BCE113712	24015	60199	KPN306316	36076	72260	SMU100700			
11954	48138	BCE113716	24016	60200	KPN306317	36077	72261	SMU100701			
11955	48139	BCE113728	24017	60201	KPN306321	36078	72262	SMU100705			
11956	48140	BCE113754	24018	60202	KPN306333	36079	72263	SMU100706			
11957	48141	BCE113780	24019	60203	KPN306347	36080	72264	SMU100710			
11958	48142	BCE113782	24020	60204	KPN306385	36081	72265	SMU100712			
11959	48143	BCE113790	24021	60205	KPN306391	36082	72266	SMU100718			
11960	48144	BCE113806	24022	60206	KPN306422	36083	72267	SMU100719			
11961	48145	BCE113835	24023	60207	KPN306449	36084	72268	SMU100726			
11962	48146	BCE113842	24024	60208	KPN306459	36085	72269	SMU100730			
11963	48147	BCE113860	24025	60209	KPN306468	36086	72270	SMU100731			
11964	48148	BCE113904	24026	60210	KPN306469	36087	72271	SMU100733			
11965	48149	BCE113907	24027	60211	KPN306527	36088	72272	SMU100734			
11966	48150	BCE113920	24028	60212	KPN306562	36089	72273	SMU100736			
11967	48151	BCE113954	24029	60213	KPN306610	36090	72274	SMU100737			
11968	48152	BCE113957	24030	60214	KPN306611	36091	72275	SMU100741			
11969	48153	BCE113968	24031	60215	KPN306621	36092	72276	SMU100745			
11970	48154	BCE113981	24032	60216	KPN306624	36093	72277	SMU100747			
11971	48155	BCE113991	24033	60217	KPN306630	36094	72278	SMU100748			
11972	48156	BCE114005	24034	60218	KPN306639	36095	72279	SMU100749			
11973	48157	BCE114029	24035	60219	KPN306685	36096	72280	SMU100751			
11974	48158	BCE114033	24036	60220	KPN306689	36097	72281	SMU100754			
11975	48159	BCE114044	24037	60221	KPN306701	36098	72282	SMU100756			
11976	48160	BCE114066	24038	60222	KPN306713	36099	72283	SMU100757			
11977	48161	BCE114068	24039	60223	KPN306727	36100	72284	SMU100763			
11978	48162	BCE114095	24040	60224	KPN306735	36101	72285	SMU100768			
11979	48163	BCE114096	24041	60225	KPN306758	36102	72286	SMU100777			
11980	48164	BCE114143	24042	60226	KPN306771	36103	72287	SMU100781			
11981	48165	BCE114157	24043	60227	KPN306799	36104	72288	SMU100783			
11982	48166	BCE114206	24044	60228	KPN306802	36105	72289	SMU100784			
11983	48167	BCE114237	24045	60229	KPN306809	36106	72290	SMU100787			
11984	48168	BCE114240	24046	60230	KPN306822	36107	72291	SMU100789			
11985	48169	BCE114261	24047	60231	KPN306827	36108	72292	SMU100790			

WO 02/077183									PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
11986	48170	BCE114267	24048	60232	KPN306848	36109	72293	SMU100791			
11987	48171	BCE114286	24049	60233	KPN306854	36110	72294	SMU100793			
11988	48172	BCE114299	24050	60234	KPN306892	36111	72295	SMU100795			
11989	48173	BCE114303	24051	60235	KPN306928	36112	72296	SMU100796			
11990	48174	BCE114309	24052	60236	KPN306960	36113	72297	SMU100800			
11991	48175	BCE114311	24053	60237	KPN306988	36114	72298	SMU100802			
11992	48176	BCE114338	24054	60238	KPN306992	36115	72299	SMU100803			
11993	48177	BCE114366	24055	60239	KPN307027	36116	72300	SMU100804			
11994	48178	BCE114396	24056	60240	KPN307029	36117	72301	SMU100806			
11995	48179	BCE114401	24057	60241	KPN307040	36118	72302	SMU100809			
11996	48180	BCE114418	24058	60242	KPN307048	36119	72303	SMU100817			
11997	48181	BCE114431	24059	60243	KPN307117	36120	72304	SMU100819			
11998	48182	BCE114441	24060	60244	KPN307137	36121	72305	SMU100823			
11999	48183	BCE114457	24061	60245	KPN307162	36122	72306	SMU100824			
12000	48184	BCE114461	24062	60246	KPN307303	36123	72307	SMU100841			
12001	48185	BCE114462	24063	60247	KPN307304	36124	72308	SMU100846			
12002	48186	BCE114465	24064	60248	KPN307346	36125	72309	SMU100848			
12003	48187	BCE114473	24065	60249	KPN307371	36126	72310	SMU100850			
12004	48188	BCE114484	24066	60250	KPN307408	36127	72311	SMU100854			
12005	48189	BCE114517	24067	60251	KPN307471	36128	72312	SMU100855			
12006	48190	BCE114521	24068	60252	KPN307476	36129	72313	SMU100858			
12007	48191	BCE114526	24069	60253	KPN307509	36130	72314	SMU100859			
12008	48192	BCE114538	24070	60254	KPN307585	36131	72315	SMU100862			
12009	48193	BCE114545	24071	60255	KPN307601	36132	72316	SMU100865			
12010	48194	BCE114553	24072	60256	KPN307613	36133	72317	SMU100869			
12011	48195	BCE114555	24073	60257	KPN307669	36134	72318	SMU100871			
12012	48196	BCE114560	24074	60258	KPN307676	36135	72319	SMU100876			
12013	48197	BCE114567	24075	60259	KPN307712	36136	72320	SMU100878			
12014	48198	BCE114633	24076	60260	KPN307753	36137	72321	SMU100880			
12015	48199	BCE114648	24077	60261	KPN307759	36138	72322	SMU100881			
12016	48200	BCE114655	24078	60262	KPN307938	36139	72323	SMU100883			
12017	48201	BCE114693	24079	60263	KPN307946	36140	72324	SMU100886			
12018	48202	BCE114708	24080	60264	KPN307947	36141	72325	SMU100890			
12019	48203	BCE114721	24081	60265	KPN307953	36142	72326	SMU100891			
12020	48204	BCE114722	24082	60266	KPN308025	36143	72327	SMU100892			
12021	48205	BCE114725	24083	60267	KPN308058	36144	72328	SMU100894			
12022	48206	BCE114751	24084	60268	KPN308062	36145	72329	SMU100896			
12023	48207	BCE114763	24085	60269	KPN308114	36146	72330	SMU100898			
12024	48208	BCE114764	24086	60270	KPN308134	36147	72331	SMU100904			
12025	48209	BCE114774	24087	60271	KPN308138	36148	72332	SMU100907			
12026	48210	BCE114776	24088	60272	KPN308152	36149	72333	SMU100908			
12027	48211	BCE114784	24089	60273	KPN308180	36150	72334	SMU100910			
12028	48212	BCE114785	24090	60274	KPN308220	36151	72335	SMU100912			
12029	48213	BCE114807	24091	60275	KPN308245	36152	72336	SMU100919			
12030	48214	BCE114835	24092	60276	KPN308256	36153	72337	SMU100923			
12031	48215	BCE114850	24093	60277	KPN308271	36154	72338	SMU100931			
12032	48216	BCE114856	24094	60278	KPN308310	36155	72339	SMU100935			
12033	48217	BCE114868	24095	60279	KPN308311	36156	72340	SMU100937			
12034	48218	BCE114906	24096	60280	KPN308332	36157	72341	SMU100938			
12035	48219	BCE114915	24097	60281	KPN308372	36158	72342	SMU100940			
12036	48220	BCE114917	24098	60282	KPN308452	36159	72343	SMU100942			
12037	48221	BCE114975	24099	60283	KPN308496	36160	72344	SMU100943			
12038	48222	BCE114986	24100	60284	KPN308497	36161	72345	SMU100946			
12039	48223	BCE115030	24101	60285	KPN308524	36162	72346	SMU100950			
12040	48224	BCE115034	24102	60286	KPN308603	36163	72347	SMU100954			

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12041	48225	BCE115057	24103	60287	KPN308636	36164	72348	SMU100956
12042	48226	BCE115062	24104	60288	KPN308651	36165	72349	SMU100957
12043	48227	BCE115084	24105	60289	KPN308657	36166	72350	SMU100958
12044	48228	BCE115088	24106	60290	KPN308666	36167	72351	SMU100962
12045	48229	BCE115095	24107	60291	KPN308672	36168	72352	SMU100963
12046	48230	BCE115108	24108	60292	KPN308674	36169	72353	SMU100972
12047	48231	BCE115118	24109	60293	KPN308679	36170	72354	SMU100974
12048	48232	BCE115125	24110	60294	KPN308692	36171	72355	SMU100975
12049	48233	BCE115140	24111	60295	KPN308697	36172	72356	SMU100986
12050	48234	BCE115174	24112	60296	KPN308700	36173	72357	SMU100987
12051	48235	BCE115180	24113	60297	KPN308721	36174	72358	SMU100992
12052	48236	BCE115205	24114	60298	KPN308726	36175	72359	SMU100993
12053	48237	BCE115215	24115	60299	KPN308727	36176	72360	SMU100995
12054	48238	BCE115231	24116	60300	KPN308729	36177	72361	SMU100999
12055	48239	BFR100028	24117	60301	KPN308756	36178	72362	SMU101001
12056	48240	BFR100037	24118	60302	KPN308783	36179	72363	SMU101004
12057	48241	BFR100047	24119	60303	KPN308799	36180	72364	SMU101006
12058	48242	BFR100058	24120	60304	KPN308841	36181	72365	SMU101007
12059	48243	BFR100072	24121	60305	KPN308845	36182	72366	SMU101008
12060	48244	BFR100084	24122	60306	KPN308865	36183	72367	SMU101010
12061	48245	BFR100085	24123	60307	KPN308870	36184	72368	SMU101016
12062	48246	BFR100087	24124	60308	KPN308873	36185	72369	SMU101017
12063	48247	BFR100093	24125	60309	KPN308876	36186	72370	SMU101018
12064	48248	BFR10010	24126	60310	KPN308894	36187	72371	SMU101019
12065	48249	BFR100113	24127	60311	KPN308897	36188	72372	SMU101024
12066	48250	BFR100129	24128	60312	KPN308912	36189	72373	SMU101026
12067	48251	BFR100135	24129	60313	KPN308934	36190	72374	SMU101029
12068	48252	BFR100168	24130	60314	KPN308952	36191	72375	SMU101030
12069	48253	BFR100173	24131	60315	KPN308954	36192	72376	SMU101031
12070	48254	BFR100177	24132	60316	KPN308982	36193	72377	SMU101032
12071	48255	BFR100189	24133	60317	KPN309027	36194	72378	SMU101036
12072	48256	BFR100205	24134	60318	KPN309030	36195	72379	SMU101037
12073	48257	BFR100206	24135	60319	KPN309045	36196	72380	SMU101038
12074	48258	BFR100208	24136	60320	KPN309050	36197	72381	SMU101039
12075	48259	BFR100214	24137	60321	KPN309059	36198	72382	SMU101041
12076	48260	BFR100242	24138	60322	KPN309062	36199	72383	SMU101043
12077	48261	BFR100255	24139	60323	KPN309070	36200	72384	SMU101048
12078	48262	BFR100259	24140	60324	KPN309071	36201	72385	SMU101053
12079	48263	BFR100304	24141	60325	KPN309093	36202	72386	SMU101054
12080	48264	BFR100314	24142	60326	KPN309113	36203	72387	SMU101057
12081	48265	BFR100316	24143	60327	KPN309121	36204	72388	SMU101064
12082	48266	BFR100332	24144	60328	KPN309152	36205	72389	SMU101066
12083	48267	BFR10034	24145	60329	KPN309157	36206	72390	SMU101068
12084	48268	BFR100347	24146	60330	KPN309179	36207	72391	SMU101072
12085	48269	BFR100350	24147	60331	KPN309180	36208	72392	SMU101074
12086	48270	BFR100362	24148	60332	KPN309208	36209	72393	SMU101079
12087	48271	BFR100366	24149	60333	LMO100012	36210	72394	SMU101081
12088	48272	BFR100408	24150	60334	LMO100015	36211	72395	SMU101082
12089	48273	BFR100412	24151	60335	LMO100023	36212	72396	SMU101086
12090	48274	BFR100416	24152	60336	LMO100025	36213	72397	SMU101088
12091	48275	BFR10042	24153	60337	LMO100028	36214	72398	SMU101095
12092	48276	BFR100422	24154	60338	LMO100030	36215	72399	SMU101096
12093	48277	BFR100428	24155	60339	LMO100031	36216	72400	SMU101099
12094	48278	BFR100429	24156	60340	LMO100034	36217	72401	SMU101103
12095	48279	BFR100430	24157	60341	LMO100036	36218	72402	SMU101104

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12096	48280	BFR100448	24158	60342	LMO100038	36219	72403	SMU101105
12097	48281	BFR100456	24159	60343	LMO100045	36220	72404	SMU101107
12098	48282	BFR100487	24160	60344	LMO100047	36221	72405	SMU101110
12099	48283	BFR100495	24161	60345	LMO100059	36222	72406	SMU101114
12100	48284	BFR10050	24162	60346	LMO100062	36223	72407	SMU101118
12101	48285	BFR10051	24163	60347	LMO100063	36224	72408	SMU101121
12102	48286	BFR100523	24164	60348	LMO100084	36225	72409	SMU101127
12103	48287	BFR100529	24165	60349	LMO100087	36226	72410	SMU101129
12104	48288	BFR100550	24166	60350	LMO100089	36227	72411	SMU101137
12105	48289	BFR100551	24167	60351	LMO100095	36228	72412	SMU101138
12106	48290	BFR100579	24168	60352	LMO100103	36229	72413	SMU101140
12107	48291	BFR100583	24169	60353	LMO100106	36230	72414	SMU101141
12108	48292	BFR100585	24170	60354	LMO100107	36231	72415	SMU101143
12109	48293	BFR100594	24171	60355	LMO100111	36232	72416	SMU101145
12110	48294	BFR100600	24172	60356	LMO100114	36233	72417	SMU101147
12111	48295	BFR100601	24173	60357	LMO100117	36234	72418	SMU101151
12112	48296	BFR100604	24174	60358	LMO100122	36235	72419	SMU101154
12113	48297	BFR100612	24175	60359	LMO100124	36236	72420	SMU101164
12114	48298	BFR100617	24176	60360	LMO100125	36237	72421	SMU101166
12115	48299	BFR10062	24177	60361	LMO100131	36238	72422	SMU101169
12116	48300	BFR100626	24178	60362	LMO100133	36239	72423	SMU101170
12117	48301	BFR100630	24179	60363	LMO100137	36240	72424	SMU101177
12118	48302	BFR10064	24180	60364	LMO100139	36241	72425	SMU101178
12119	48303	BFR10065	24181	60365	LMO100144	36242	72426	SMU101180
12120	48304	BFR100659	24182	60366	LMO100148	36243	72427	SMU101182
12121	48305	BFR100671	24183	60367	LMO100159	36244	72428	SMU101184
12122	48306	BFR100673	24184	60368	LMO100160	36245	72429	SMU101186
12123	48307	BFR100706	24185	60369	LMO100162	36246	72430	SMU101188
12124	48308	BFR100717	24186	60370	LMO100168	36247	72431	SMU101189
12125	48309	BFR100721	24187	60371	LMO100173	36248	72432	SMU101194
12126	48310	BFR100727	24188	60372	LMO100177	36249	72433	SMU101202
12127	48311	BFR100732	24189	60373	LMO100185	36250	72434	SMU101203
12128	48312	BFR100736	24190	60374	LMO100186	36251	72435	SMU101205
12129	48313	BFR100762	24191	60375	LMO100188	36252	72436	SMU101206
12130	48314	BFR100765	24192	60376	LMO100193	36253	72437	SMU101208
12131	48315	BFR10077	24193	60377	LMO100194	36254	72438	SMU101210
12132	48316	BFR100793	24194	60378	LMO100196	36255	72439	SMU101216
12133	48317	BFR100811	24195	60379	LMO100203	36256	72440	SMU101217
12134	48318	BFR100838	24196	60380	LMO100212	36257	72441	SMU101221
12135	48319	BFR100846	24197	60381	LMO100213	36258	72442	SMU101222
12136	48320	BFR100859	24198	60382	LMO100218	36259	72443	SMU101225
12137	48321	BFR100860	24199	60383	LMO100220	36260	72444	SMU101227
12138	48322	BFR100872	24200	60384	LMO100231	36261	72445	SMU101229
12139	48323	BFR100882	24201	60385	LMO100235	36262	72446	SMU101230
12140	48324	BFR100885	24202	60386	LMO100238	36263	72447	SMU101232
12141	48325	BFR100886	24203	60387	LMO100245	36264	72448	SMU101239
12142	48326	BFR100896	24204	60388	LMO100253	36265	72449	SMU101241
12143	48327	BFR10090	24205	60389	LMO100254	36266	72450	SMU101244
12144	48328	BFR100902	24206	60390	LMO100259	36267	72451	SMU101245
12145	48329	BFR100912	24207	60391	LMO100272	36268	72452	SMU101249
12146	48330	BFR100918	24208	60392	LMO100275	36269	72453	SMU101251
12147	48331	BFR10093	24209	60393	LMO100277	36270	72454	SMU101253
12148	48332	BFR100937	24210	60394	LMO100280	36271	72455	SMU101264
12149	48333	BFR100940	24211	60395	LMO100281	36272	72456	SMU101270
12150	48334	BFR100953	24212	60396	LMO100282	36273	72457	SMU101272

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12151	48335	BFR100955	24213	60397	LMO100284	36274	72458	SMU101274
12152	48336	BFR10096	24214	60398	LMO100287	36275	72459	SMU101279
12153	48337	BFR100963	24215	60399	LMO100288	36276	72460	SMU101280
12154	48338	BFR100985	24216	60400	LMO100290	36277	72461	SMU101281
12155	48339	BFR101004	24217	60401	LMO100297	36278	72462	SMU101282
12156	48340	BFR101022	24218	60402	LMO100303	36279	72463	SMU101283
12157	48341	BFR101036	24219	60403	LMO100307	36280	72464	SMU101286
12158	48342	BFR101055	24220	60404	LMO100319	36281	72465	SMU101295
12159	48343	BFR101067	24221	60405	LMO100321	36282	72466	SMU101297
12160	48344	BFR10109	24222	60406	LMO100322	36283	72467	SMU101300
12161	48345	BFR101094	24223	60407	LMO100335	36284	72468	SMU101303
12162	48346	BFR101138	24224	60408	LMO100340	36285	72469	SMU101306
12163	48347	BFR101143	24225	60409	LMO100345	36286	72470	SMU101308
12164	48348	BFR101151	24226	60410	LMO100346	36287	72471	SMU101311
12165	48349	BFR101152	24227	60411	LMO100358	36288	72472	SMU101313
12166	48350	BFR101153	24228	60412	LMO100364	36289	72473	SMU101315
12167	48351	BFR101155	24229	60413	LMO100374	36290	72474	SMU101316
12168	48352	BFR101164	24230	60414	LMO100377	36291	72475	SMU101317
12169	48353	BFR101178	24231	60415	LMO100379	36292	72476	SMU101318
12170	48354	BFR101189	24232	60416	LMO100385	36293	72477	SMU101323
12171	48355	BFR101210	24233	60417	LMO100388	36294	72478	SMU101327
12172	48356	BFR101219	24234	60418	LMO100391	36295	72479	SMU101329
12173	48357	BFR101222	24235	60419	LMO100393	36296	72480	SMU101331
12174	48358	BFR101226	24236	60420	LMO100394	36297	72481	SMU101332
12175	48359	BFR101228	24237	60421	LMO100400	36298	72482	SMU101334
12176	48360	BFR101230	24238	60422	LMO100404	36299	72483	SMU101335
12177	48361	BFR101235	24239	60423	LMO100406	36300	72484	SMU101344
12178	48362	BFR10126	24240	60424	LMO100407	36301	72485	SMU101349
12179	48363	BFR101263	24241	60425	LMO100411	36302	72486	SMU101352
12180	48364	BFR101280	24242	60426	LMO100418	36303	72487	SMU101354
12181	48365	BFR101294	24243	60427	LMO100421	36304	72488	SMU101355
12182	48366	BFR101295	24244	60428	LMO100426	36305	72489	SMU101356
12183	48367	BFR101296	24245	60429	LMO100427	36306	72490	SMU101360
12184	48368	BFR101304	24246	60430	LMO100434	36307	72491	SMU101369
12185	48369	BFR101331	24247	60431	LMO100435	36308	72492	SMU101370
12186	48370	BFR101333	24248	60432	LMO100436	36309	72493	SMU101371
12187	48371	BFR101340	24249	60433	LMO100437	36310	72494	SMU101376
12188	48372	BFR101347	24250	60434	LMO100441	36311	72495	SMU101378
12189	48373	BFR101349	24251	60435	LMO100442	36312	72496	SMU101383
12190	48374	BFR101369	24252	60436	LMO100444	36313	72497	SMU101384
12191	48375	BFR101372	24253	60437	LMO100466	36314	72498	SMU101386
12192	48376	BFR101373	24254	60438	LMO100467	36315	72499	SMU101388
12193	48377	BFR101385	24255	60439	LMO100476	36316	72500	SMU101390
12194	48378	BFR101390	24256	60440	LMO100481	36317	72501	SMU101391
12195	48379	BFR101396	24257	60441	LMO100488	36318	72502	SMU101401
12196	48380	BFR101415	24258	60442	LMO100495	36319	72503	SMU101402
12197	48381	BFR101426	24259	60443	LMO100506	36320	72504	SMU101407
12198	48382	BFR101432	24260	60444	LMO100508	36321	72505	SMU101408
12199	48383	BFR10144	24261	60445	LMO100513	36322	72506	SMU101412
12200	48384	BFR101444	24262	60446	LMO100517	36323	72507	SMU101414
12201	48385	BFR101447	24263	60447	LMO100523	36324	72508	SMU101420
12202	48386	BFR101484	24264	60448	LMO100535	36325	72509	SMU101421
12203	48387	BFR101497	24265	60449	LMO100536	36326	72510	SMU101427
12204	48388	BFR101499	24266	60450	LMO100537	36327	72511	SMU101435
12205	48389	BFR10151	24267	60451	LMO100543	36328	72512	SMU101437

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12206	48390	BFR101518	24268	60452	LMO100551	36329	72513	SMU101439
12207	48391	BFR10152	24269	60453	LMO100556	36330	72514	SMU101446
12208	48392	BFR101549	24270	60454	LMO100570	36331	72515	SMU101447
12209	48393	BFR101559	24271	60455	LMO100571	36332	72516	SMU101449
12210	48394	BFR10157	24272	60456	LMO100572	36333	72517	SMU101450
12211	48395	BFR101582	24273	60457	LMO100576	36334	72518	SMU101451
12212	48396	BFR10160	24274	60458	LMO100578	36335	72519	SMU101453
12213	48397	BFR101607	24275	60459	LMO100582	36336	72520	SMU101454
12214	48398	BFR101650	24276	60460	LMO100583	36337	72521	SMU101455
12215	48399	BFR101675	24277	60461	LMO100585	36338	72522	SMU101464
12216	48400	BFR10168	24278	60462	LMO100586	36339	72523	SMU101465
12217	48401	BFR101716	24279	60463	LMO100590	36340	72524	SMU101466
12218	48402	BFR101725	24280	60464	LMO100594	36341	72525	SMU101467
12219	48403	BFR101730	24281	60465	LMO100596	36342	72526	SMU101468
12220	48404	BFR101740	24282	60466	LMO100597	36343	72527	SMU101471
12221	48405	BFR101753	24283	60467	LMO100599	36344	72528	SMU101474
12222	48406	BFR101754	24284	60468	LMO100602	36345	72529	SMU101475
12223	48407	BFR101755	24285	60469	LMO100605	36346	72530	SMU101478
12224	48408	BFR10176	24286	60470	LMO100609	36347	72531	SMU101479
12225	48409	BFR101776	24287	60471	LMO100611	36348	72532	SMU101480
12226	48410	BFR101778	24288	60472	LMO100614	36349	72533	SMU101483
12227	48411	BFR101794	24289	60473	LMO100615	36350	72534	SMU101487
12228	48412	BFR101806	24290	60474	LMO100624	36351	72535	SMU101490
12229	48413	BFR10181	24291	60475	LMO100625	36352	72536	SMU101492
12230	48414	BFR10185	24292	60476	LMO100629	36353	72537	SMU101495
12231	48415	BFR10188	24293	60477	LMO100631	36354	72538	SMU101498
12232	48416	BFR10189	24294	60478	LMO100639	36355	72539	SMU101500
12233	48417	BFR101898	24295	60479	LMO100640	36356	72540	SMU101505
12234	48418	BFR101900	24296	60480	LMO100643	36357	72541	SMU101506
12235	48419	BFR101904	24297	60481	LMO100648	36358	72542	SMU101509
12236	48420	BFR101983	24298	60482	LMO100649	36359	72543	SMU101513
12237	48421	BFR10199	24299	60483	LMO100657	36360	72544	SMU101518
12238	48422	BFR102018	24300	60484	LMO100662	36361	72545	SMU101520
12239	48423	BFR102042	24301	60485	LMO100666	36362	72546	SMU101534
12240	48424	BFR102053	24302	60486	LMO100669	36363	72547	SMU101535
12241	48425	BFR10209	24303	60487	LMO100672	36364	72548	SMU101536
12242	48426	BFR102096	24304	60488	LMO100679	36365	72549	SMU101538
12243	48427	BFR102099	24305	60489	LMO100680	36366	72550	SMU101539
12244	48428	BFR102108	24306	60490	LMO100689	36367	72551	SMU101540
12245	48429	BFR102113	24307	60491	LMO100693	36368	72552	SMU101545
12246	48430	BFR102131	24308	60492	LMO100694	36369	72553	SMU101546
12247	48431	BFR102132	24309	60493	LMO100695	36370	72554	SMU101548
12248	48432	BFR102134	24310	60494	LMO100703	36371	72555	SMU101550
12249	48433	BFR102146	24311	60495	LMO100716	36372	72556	SMU101553
12250	48434	BFR102176	24312	60496	LMO100718	36373	72557	SMU101554
12251	48435	BFR102180	24313	60497	LMO100724	36374	72558	SMU101565
12252	48436	BFR10219	24314	60498	LMO100726	36375	72559	SMU101571
12253	48437	BFR102190	24315	60499	LMO100731	36376	72560	SMU101576
12254	48438	BFR102200	24316	60500	LMO100732	36377	72561	SMU101599
12255	48439	BFR102217	24317	60501	LMO100736	36378	72562	SMU101640
12256	48440	BFR102219	24318	60502	LMO100742	36379	72563	SMU101645
12257	48441	BFR102222	24319	60503	LMO100743	36380	72564	SMU101666
12258	48442	BFR102226	24320	60504	LMO100749	36381	72565	SMU101683
12259	48443	BFR102236	24321	60505	LMO100756	36382	72566	SMU101698
12260	48444	BFR102256	24322	60506	LMO100759	36383	72567	SMU101700

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12261	48445	BFR102268	24323	60507	LMO100760	36384	72568	SMU101707
12262	48446	BFR102271	24324	60508	LMO100765	36385	72569	SMU101717
12263	48447	BFR102275	24325	60509	LMO100772	36386	72570	SMU101724
12264	48448	BFR102278	24326	60510	LMO100773	36387	72571	SMU101759
12265	48449	BFR102281	24327	60511	LMO100774	36388	72572	SMU101770
12266	48450	BFR102319	24328	60512	LMO100776	36389	72573	SMU101779
12267	48451	BFR10235	24329	60513	LMO100778	36390	72574	SMU101810
12268	48452	BFR102378	24330	60514	LMO100791	36391	72575	SMU101812
12269	48453	BFR102381	24331	60515	LMO100794	36392	72576	SMU101835
12270	48454	BFR102385	24332	60516	LMO100796	36393	72577	SMU101847
12271	48455	BFR102397	24333	60517	LMO100797	36394	72578	SMU101861
12272	48456	BFR102402	24334	60518	LMO100798	36395	72579	SMU101868
12273	48457	BFR10242	24335	60519	LMO100801	36396	72580	SMU101883
12274	48458	BFR102425	24336	60520	LMO100807	36397	72581	SMU101889
12275	48459	BFR102459	24337	60521	LMO100809	36398	72582	SMU101912
12276	48460	BFR102465	24338	60522	LMO100814	36399	72583	SMU101940
12277	48461	BFR102473	24339	60523	LMO100816	36400	72584	SMU101949
12278	48462	BFR102480	24340	60524	LMO100827	36401	72585	SMU101951
12279	48463	BFR102496	24341	60525	LMO100830	36402	72586	SMU101953
12280	48464	BFR102501	24342	60526	LMO100835	36403	72587	SMU101955
12281	48465	BFR102521	24343	60527	LMO100837	36404	72588	SMU101966
12282	48466	BFR10255	24344	60528	LMO100839	36405	72589	SMU101983
12283	48467	BFR102551	24345	60529	LMO100841	36406	72590	SMU101988
12284	48468	BFR102552	24346	60530	LMO100844	36407	72591	SMU101999
12285	48469	BFR102568	24347	60531	LMO100848	36408	72592	SMU102003
12286	48470	BFR102578	24348	60532	LMO100853	36409	72593	SMU102015
12287	48471	BFR102598	24349	60533	LMO100858	36410	72594	SMU102024
12288	48472	BFR10261	24350	60534	LMO100864	36411	72595	SMU102028
12289	48473	BFR102616	24351	60535	LMO100865	36412	72596	SMU102045
12290	48474	BFR102620	24352	60536	LMO100871	36413	72597	SMU102069
12291	48475	BFR102635	24353	60537	LMO100872	36414	72598	SMU102074
12292	48476	BFR102640	24354	60538	LMO100873	36415	72599	SMU102094
12293	48477	BFR102649	24355	60539	LMO100876	36416	72600	SMU102293
12294	48478	BFR10266	24356	60540	LMO100878	36417	72601	SMU102342
12295	48479	BFR102668	24357	60541	LMO100883	36418	72602	SMU102404
12296	48480	BFR102681	24358	60542	LMO100884	36419	72603	SMU102515
12297	48481	BFR102682	24359	60543	LMO100891	36420	72604	SMU102548
12298	48482	BFR102685	24360	60544	LMO100900	36421	72605	SMU102606
12299	48483	BFR102691	24361	60545	LMO100907	36422	72606	SMU102730
12300	48484	BFR102710	24362	60546	LMO100913	36423	72607	SMU102800
12301	48485	BFR102711	24363	60547	LMO100919	36424	72608	SMU102834
12302	48486	BFR10273	24364	60548	LMO100923	36425	72609	SMU102853
12303	48487	BFR102730	24365	60549	LMO100925	36426	72610	SMU102869
12304	48488	BFR10274	24366	60550	LMO100926	36427	72611	SMU102926
12305	48489	BFR102747	24367	60551	LMO100934	36428	72612	SMU103046
12306	48490	BFR102748	24368	60552	LMO100937	36429	72613	SMU103098
12307	48491	BFR102757	24369	60553	LMO100940	36430	72614	SMU103189
12308	48492	BFR102762	24370	60554	LMO100950	36431	72615	SPA100008
12309	48493	BFR102771	24371	60555	LMO100952	36432	72616	SPA100011
12310	48494	BFR102796	24372	60556	LMO100967	36433	72617	SPA100012
12311	48495	BFR102798	24373	60557	LMO100968	36434	72618	SPA100028
12312	48496	BFR10280	24374	60558	LMO100978	36435	72619	SPA100030
12313	48497	BFR102809	24375	60559	LMO100987	36436	72620	SPA100031
12314	48498	BFR102810	24376	60560	LMO100988	36437	72621	SPA100033
12315	48499	BFR102815	24377	60561	LMO100989	36438	72622	SPA100038

WO 02/077183									PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12316	48500	BFR102843	24378	60562	LMO100999	36439	72623	SPA100039			
12317	48501	BFR102850	24379	60563	LMO101001	36440	72624	SPA100043			
12318	48502	BFR102852	24380	60564	LMO101005	36441	72625	SPA100052			
12319	48503	BFR102864	24381	60565	LMO101007	36442	72626	SPA100057			
12320	48504	BFR102868	24382	60566	LMO101008	36443	72627	SPA100063			
12321	48505	BFR102889	24383	60567	LMO101012	36444	72628	SPA100073			
12322	48506	BFR10291	24384	60568	LMO101013	36445	72629	SPA100115			
12323	48507	BFR102922	24385	60569	LMO101015	36446	72630	SPA100121			
12324	48508	BFR102926	24386	60570	LMO101018	36447	72631	SPA100127			
12325	48509	BFR102934	24387	60571	LMO101019	36448	72632	SPA100132			
12326	48510	BFR102942	24388	60572	LMO101021	36449	72633	SPA100137			
12327	48511	BFR102947	24389	60573	LMO101023	36450	72634	SPA100138			
12328	48512	BFR10298	24390	60574	LMO101037	36451	72635	SPA100142			
12329	48513	BFR102986	24391	60575	LMO101045	36452	72636	SPA100149			
12330	48514	BFR102987	24392	60576	LMO101047	36453	72637	SPA100154			
12331	48515	BFR102991	24393	60577	LMO101049	36454	72638	SPA100160			
12332	48516	BFR102996	24394	60578	LMO101052	36455	72639	SPA100167			
12333	48517	BFR103003	24395	60579	LMO101056	36456	72640	SPA100176			
12334	48518	BFR103005	24396	60580	LMO101064	36457	72641	SPA100177			
12335	48519	BFR103042	24397	60581	LMO101074	36458	72642	SPA100178			
12336	48520	BFR103060	24398	60582	LMO101081	36459	72643	SPA100194			
12337	48521	BFR103062	24399	60583	LMO101092	36460	72644	SPA100195			
12338	48522	BFR103068	24400	60584	LMO101102	36461	72645	SPA100196			
12339	48523	BFR103076	24401	60585	LMO101105	36462	72646	SPA100202			
12340	48524	BFR103079	24402	60586	LMO101111	36463	72647	SPA100206			
12341	48525	BFR103103	24403	60587	LMO101112	36464	72648	SPA100209			
12342	48526	BFR103117	24404	60588	LMO101113	36465	72649	SPA100213			
12343	48527	BFR103128	24405	60589	LMO101114	36466	72650	SPA100218			
12344	48528	BFR103141	24406	60590	LMO101117	36467	72651	SPA100221			
12345	48529	BFR103149	24407	60591	LMO101118	36468	72652	SPA100230			
12346	48530	BFR103178	24408	60592	LMO101120	36469	72653	SPA100233			
12347	48531	BFR10318	24409	60593	LMO101121	36470	72654	SPA100234			
12348	48532	BFR103235	24410	60594	LMO101122	36471	72655	SPA100238			
12349	48533	BFR103242	24411	60595	LMO101128	36472	72656	SPA100245			
12350	48534	BFR103243	24412	60596	LMO101135	36473	72657	SPA100247			
12351	48535	BFR103244	24413	60597	LMO101140	36474	72658	SPA100263			
12352	48536	BFR103264	24414	60598	LMO101142	36475	72659	SPA100267			
12353	48537	BFR103324	24415	60599	LMO101147	36476	72660	SPA100271			
12354	48538	BFR103350	24416	60600	LMO101148	36477	72661	SPA100272			
12355	48539	BFR103387	24417	60601	LMO101153	36478	72662	SPA100275			
12356	48540	BFR103418	24418	60602	LMO101154	36479	72663	SPA100283			
12357	48541	BFR103444	24419	60603	LMO101164	36480	72664	SPA100290			
12358	48542	BFR103498	24420	60604	LMO101165	36481	72665	SPA100292			
12359	48543	BFR103500	24421	60605	LMO101172	36482	72666	SPA100308			
12360	48544	BFR103502	24422	60606	LMO101175	36483	72667	SPA100310			
12361	48545	BFR103505	24423	60607	LMO101177	36484	72668	SPA100311			
12362	48546	BFR103517	24424	60608	LMO101179	36485	72669	SPA100314			
12363	48547	BFR10353	24425	60609	LMO101181	36486	72670	SPA100318			
12364	48548	BFR103543	24426	60610	LMO101189	36487	72671	SPA100328			
12365	48549	BFR103557	24427	60611	LMO101190	36488	72672	SPA100332			
12366	48550	BFR103599	24428	60612	LMO101197	36489	72673	SPA100333			
12367	48551	BFR103658	24429	60613	LMO101198	36490	72674	SPA100334			
12368	48552	BFR103669	24430	60614	LMO101202	36491	72675	SPA100336			
12369	48553	BFR103680	24431	60615	LMO101203	36492	72676	SPA100351			
12370	48554	BFR103686	24432	60616	LMO101206	36493	72677	SPA100352			

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12371	48555	BFR103701	24433	60617	LMO101207	36494	72678	SPA100353
12372	48556	BFR103702	24434	60618	LMO101211	36495	72679	SPA100368
12373	48557	BFR10371	24435	60619	LMO101215	36496	72680	SPA100376
12374	48558	BFR103716	24436	60620	LMO101222	36497	72681	SPA100379
12375	48559	BFR103731	24437	60621	LMO101229	36498	72682	SPA100383
12376	48560	BFR103746	24438	60622	LMO101232	36499	72683	SPA100386
12377	48561	BFR10375	24439	60623	LMO101233	36500	72684	SPA100405
12378	48562	BFR103759	24440	60624	LMO101235	36501	72685	SPA100408
12379	48563	BFR103764	24441	60625	LMO101238	36502	72686	SPA100411
12380	48564	BFR103776	24442	60626	LMO101246	36503	72687	SPA100412
12381	48565	BFR103785	24443	60627	LMO101248	36504	72688	SPA100416
12382	48566	BFR10379	24444	60628	LMO101249	36505	72689	SPA100422
12383	48567	BFR103796	24445	60629	LMO101257	36506	72690	SPA100423
12384	48568	BFR10381	24446	60630	LMO101258	36507	72691	SPA100425
12385	48569	BFR103841	24447	60631	LMO101259	36508	72692	SPA100430
12386	48570	BFR103847	24448	60632	LMO101273	36509	72693	SPA100434
12387	48571	BFR103869	24449	60633	LMO101276	36510	72694	SPA100439
12388	48572	BFR10388	24450	60634	LMO101281	36511	72695	SPA100447
12389	48573	BFR103881	24451	60635	LMO101290	36512	72696	SPA100448
12390	48574	BFR103945	24452	60636	LMO101296	36513	72697	SPA100450
12391	48575	BFR103954	24453	60637	LMO101299	36514	72698	SPA100451
12392	48576	BFR103964	24454	60638	LMO101307	36515	72699	SPA100458
12393	48577	BFR10398	24455	60639	LMO101308	36516	72700	SPA100460
12394	48578	BFR103995	24456	60640	LMO101310	36517	72701	SPA100461
12395	48579	BFR104010	24457	60641	LMO101312	36518	72702	SPA100463
12396	48580	BFR104064	24458	60642	LMO101318	36519	72703	SPA100470
12397	48581	BFR10407	24459	60643	LMO101320	36520	72704	SPA100472
12398	48582	BFR104094	24460	60644	LMO101321	36521	72705	SPA100481
12399	48583	BFR104105	24461	60645	LMO101322	36522	72706	SPA100483
12400	48584	BFR104147	24462	60646	LMO101325	36523	72707	SPA100488
12401	48585	BFR104161	24463	60647	LMO101330	36524	72708	SPA100492
12402	48586	BFR104169	24464	60648	LMO101334	36525	72709	SPA100494
12403	48587	BFR104184	24465	60649	LMO101340	36526	72710	SPA100495
12404	48588	BFR104186	24466	60650	LMO101342	36527	72711	SPA100496
12405	48589	BFR104188	24467	60651	LMO101343	36528	72712	SPA100500
12406	48590	BFR104190	24468	60652	LMO101346	36529	72713	SPA100508
12407	48591	BFR104201	24469	60653	LMO101348	36530	72714	SPA100512
12408	48592	BFR104209	24470	60654	LMO101349	36531	72715	SPA100514
12409	48593	BFR10421	24471	60655	LMO101358	36532	72716	SPA100515
12410	48594	BFR104214	24472	60656	LMO101364	36533	72717	SPA100516
12411	48595	BFR10422	24473	60657	LMO101366	36534	72718	SPA100521
12412	48596	BFR10423	24474	60658	LMO101367	36535	72719	SPA100524
12413	48597	BFR10424	24475	60659	LMO101368	36536	72720	SPA100526
12414	48598	BFR10425	24476	60660	LMO101370	36537	72721	SPA100545
12415	48599	BFR104257	24477	60661	LMO101374	36538	72722	SPA100549
12416	48600	BFR10426	24478	60662	LMO101375	36539	72723	SPA100551
12417	48601	BFR104285	24479	60663	LMO101377	36540	72724	SPA100555
12418	48602	BFR104288	24480	60664	LMO101378	36541	72725	SPA100561
12419	48603	BFR104306	24481	60665	LMO101394	36542	72726	SPA100585
12420	48604	BFR104321	24482	60666	LMO101395	36543	72727	SPA100586
12421	48605	BFR104322	24483	60667	LMO101402	36544	72728	SPA100594
12422	48606	BFR104340	24484	60668	LMO101408	36545	72729	SPA100601
12423	48607	BFR104350	24485	60669	LMO101411	36546	72730	SPA100602
12424	48608	BFR10436	24486	60670	LMO101414	36547	72731	SPA100606
12425	48609	BFR104366	24487	60671	LMO101419	36548	72732	SPA100607

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12426	48610	BFR104367	24488	60672	LMO101423	36549	72733	SPA100608
12427	48611	BFR10437	24489	60673	LMO101432	36550	72734	SPA100613
12428	48612	BFR104377	24490	60674	LMO101436	36551	72735	SPA100616
12429	48613	BFR104387	24491	60675	LMO101438	36552	72736	SPA100617
12430	48614	BFR104408	24492	60676	LMO101439	36553	72737	SPA100619
12431	48615	BFR104413	24493	60677	LMO101440	36554	72738	SPA100620
12432	48616	BFR10442	24494	60678	LMO101445	36555	72739	SPA100621
12433	48617	BFR104421	24495	60679	LMO101448	36556	72740	SPA100628
12434	48618	BFR104422	24496	60680	LMO101449	36557	72741	SPA100629
12435	48619	BFR104427	24497	60681	LMO101451	36558	72742	SPA100630
12436	48620	BFR104438	24498	60682	LMO101454	36559	72743	SPA100636
12437	48621	BFR104439	24499	60683	LMO101459	36560	72744	SPA100641
12438	48622	BFR104483	24500	60684	LMO101460	36561	72745	SPA100654
12439	48623	BFR104492	24501	60685	LMO101465	36562	72746	SPA100655
12440	48624	BFR104500	24502	60686	LMO101467	36563	72747	SPA100656
12441	48625	BFR10451	24503	60687	LMO101469	36564	72748	SPA100657
12442	48626	BFR104541	24504	60688	LMO101474	36565	72749	SPA100660
12443	48627	BFR104545	24505	60689	LMO101479	36566	72750	SPA100667
12444	48628	BFR104549	24506	60690	LMO101489	36567	72751	SPA100673
12445	48629	BFR10455	24507	60691	LMO101490	36568	72752	SPA100686
12446	48630	BFR104554	24508	60692	LMO101499	36569	72753	SPA100687
12447	48631	BFR104593	24509	60693	LMO101503	36570	72754	SPA100700
12448	48632	BFR104611	24510	60694	LMO101504	36571	72755	SPA100702
12449	48633	BFR104616	24511	60695	LMO101510	36572	72756	SPA100708
12450	48634	BFR10464	24512	60696	LMO101512	36573	72757	SPA100711
12451	48635	BFR104644	24513	60697	LMO101514	36574	72758	SPA100713
12452	48636	BFR10466	24514	60698	LMO101517	36575	72759	SPA100716
12453	48637	BFR104660	24515	60699	LMO101523	36576	72760	SPA100719
12454	48638	BFR104661	24516	60700	LMO101524	36577	72761	SPA100720
12455	48639	BFR10467	24517	60701	LMO101532	36578	72762	SPA100728
12456	48640	BFR10471	24518	60702	LMO101540	36579	72763	SPA100729
12457	48641	BFR104711	24519	60703	LMO101542	36580	72764	SPA100734
12458	48642	BFR104724	24520	60704	LMO101544	36581	72765	SPA100735
12459	48643	BFR104729	24521	60705	LMO101547	36582	72766	SPA100737
12460	48644	BFR104751	24522	60706	LMO101551	36583	72767	SPA100739
12461	48645	BFR104769	24523	60707	LMO101556	36584	72768	SPA100744
12462	48646	BFR104777	24524	60708	LMO101561	36585	72769	SPA100748
12463	48647	BFR104778	24525	60709	LMO101566	36586	72770	SPA100750
12464	48648	BFR10478	24526	60710	LMO101576	36587	72771	SPA100751
12465	48649	BFR104786	24527	60711	LMO101581	36588	72772	SPA100754
12466	48650	BFR104790	24528	60712	LMO101585	36589	72773	SPA100761
12467	48651	BFR104792	24529	60713	LMO101587	36590	72774	SPA100765
12468	48652	BFR104796	24530	60714	LMO101588	36591	72775	SPA100768
12469	48653	BFR104817	24531	60715	LMO101591	36592	72776	SPA100769
12470	48654	BFR104845	24532	60716	LMO101597	36593	72777	SPA100773
12471	48655	BFR104846	24533	60717	LMO101598	36594	72778	SPA100775
12472	48656	BFR104849	24534	60718	LMO101599	36595	72779	SPA100787
12473	48657	BFR104855	24535	60719	LMO101604	36596	72780	SPA100790
12474	48658	BFR104874	24536	60720	LMO101606	36597	72781	SPA100792
12475	48659	BFR104875	24537	60721	LMO101610	36598	72782	SPA100796
12476	48660	BFR104894	24538	60722	LMO101615	36599	72783	SPA100809
12477	48661	BFR104902	24539	60723	LMO101624	36600	72784	SPA100812
12478	48662	BFR10491	24540	60724	LMO101629	36601	72785	SPA100813
12479	48663	BFR104914	24541	60725	LMO101635	36602	72786	SPA100816
12480	48664	BFR104919	24542	60726	LMO101639	36603	72787	SPA100818

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12481	48665	BFR10492	24543	60727	LMO101643	36604	72788	SPA100819
12482	48666	BFR104933	24544	60728	LMO101645	36605	72789	SPA100823
12483	48667	BFR104935	24545	60729	LMO101646	36606	72790	SPA100824
12484	48668	BFR104950	24546	60730	LMO101650	36607	72791	SPA100825
12485	48669	BFR104989	24547	60731	LMO101656	36608	72792	SPA100826
12486	48670	BFR104991	24548	60732	LMO101661	36609	72793	SPA100829
12487	48671	BFR10500	24549	60733	LMO101665	36610	72794	SPA100837
12488	48672	BFR10501	24550	60734	LMO101666	36611	72795	SPA100838
12489	48673	BFR105024	24551	60735	LMO101667	36612	72796	SPA100839
12490	48674	BFR105073	24552	60736	LMO101675	36613	72797	SPA100846
12491	48675	BFR105074	24553	60737	LMO101679	36614	72798	SPA100847
12492	48676	BFR105086	24554	60738	LMO101688	36615	72799	SPA100853
12493	48677	BFR10509	24555	60739	LMO101689	36616	72800	SPA100868
12494	48678	BFR105109	24556	60740	LMO101697	36617	72801	SPA100882
12495	48679	BFR105147	24557	60741	LMO101698	36618	72802	SPA100886
12496	48680	BFR10515	24558	60742	LMO101705	36619	72803	SPA100900
12497	48681	BFR105168	24559	60743	LMO101711	36620	72804	SPA100901
12498	48682	BFR10520	24560	60744	LMO101712	36621	72805	SPA100903
12499	48683	BFR10521	24561	60745	LMO101722	36622	72806	SPA100907
12500	48684	BFR10522	24562	60746	LMO101725	36623	72807	SPA100912
12501	48685	BFR10527	24563	60747	LMO101732	36624	72808	SPA100917
12502	48686	BFR105341	24564	60748	LMO101733	36625	72809	SPA100920
12503	48687	BFR10535	24565	60749	LMO101739	36626	72810	SPA100925
12504	48688	BFR105362	24566	60750	LMO101740	36627	72811	SPA100926
12505	48689	BFR105372	24567	60751	LMO101744	36628	72812	SPA100931
12506	48690	BFR105380	24568	60752	LMO101748	36629	72813	SPA100934
12507	48691	BFR105381	24569	60753	LMO101750	36630	72814	SPA100936
12508	48692	BFR105397	24570	60754	LMO101754	36631	72815	SPA100937
12509	48693	BFR105453	24571	60755	LMO101757	36632	72816	SPA100941
12510	48694	BFR105454	24572	60756	LMO101759	36633	72817	SPA100944
12511	48695	BFR105493	24573	60757	LMO101763	36634	72818	SPA100956
12512	48696	BFR10552	24574	60758	LMO101764	36635	72819	SPA100957
12513	48697	BFR10553	24575	60759	LMO101766	36636	72820	SPA100958
12514	48698	BFR105535	24576	60760	LMO101774	36637	72821	SPA100959
12515	48699	BFR105539	24577	60761	LMO101775	36638	72822	SPA100960
12516	48700	BFR10554	24578	60762	LMO101778	36639	72823	SPA100961
12517	48701	BFR105563	24579	60763	LMO101779	36640	72824	SPA100963
12518	48702	BFR105579	24580	60764	LMO101787	36641	72825	SPA100981
12519	48703	BFR105590	24581	60765	LMO101789	36642	72826	SPA100983
12520	48704	BFR105629	24582	60766	LMO101791	36643	72827	SPA100988
12521	48705	BFR105670	24583	60767	LMO101794	36644	72828	SPA100998
12522	48706	BFR105684	24584	60768	LMO101796	36645	72829	SPA101019
12523	48707	BFR10569	24585	60769	LMO101800	36646	72830	SPA101021
12524	48708	BFR105724	24586	60770	LMO101801	36647	72831	SPA101025
12525	48709	BFR105798	24587	60771	LMO101802	36648	72832	SPA101027
12526	48710	BFR10585	24588	60772	LMO101803	36649	72833	SPA101028
12527	48711	BFR10586	24589	60773	LMO101804	36650	72834	SPA101034
12528	48712	BFR105861	24590	60774	LMO101809	36651	72835	SPA101047
12529	48713	BFR105869	24591	60775	LMO101810	36652	72836	SPA101051
12530	48714	BFR105878	24592	60776	LMO101815	36653	72837	SPA101059
12531	48715	BFR105888	24593	60777	LMO101821	36654	72838	SPA101061
12532	48716	BFR105907	24594	60778	LMO101825	36655	72839	SPA101063
12533	48717	BFR105927	24595	60779	LMO101828	36656	72840	SPA101069
12534	48718	BFR105929	24596	60780	LMO101829	36657	72841	SPA101071
12535	48719	BFR105934	24597	60781	LMO101830	36658	72842	SPA101077

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12536	48720	BFR105944	24598	60782	LMO101841	36659	72843	SPA101078
12537	48721	BFR105953	24599	60783	LMO101848	36660	72844	SPA101082
12538	48722	BFR105960	24600	60784	LMO101849	36661	72845	SPA101087
12539	48723	BFR105965	24601	60785	LMO101852	36662	72846	SPA101091
12540	48724	BFR105970	24602	60786	LMO101855	36663	72847	SPA101093
12541	48725	BFR10598	24603	60787	LMO101858	36664	72848	SPA101094
12542	48726	BFR10599	24604	60788	LMO101860	36665	72849	SPA101096
12543	48727	BFR105998	24605	60789	LMO101877	36666	72850	SPA101097
12544	48728	BFR106001	24606	60790	LMO101881	36667	72851	SPA101108
12545	48729	BFR106009	24607	60791	LMO101894	36668	72852	SPA101111
12546	48730	BFR106011	24608	60792	LMO101909	36669	72853	SPA101112
12547	48731	BFR106019	24609	60793	LMO101914	36670	72854	SPA101113
12548	48732	BFR106048	24610	60794	LMO101925	36671	72855	SPA101126
12549	48733	BFR106060	24611	60795	LMO101932	36672	72856	SPA101128
12550	48734	BFR106061	24612	60796	LMO101935	36673	72857	SPA101135
12551	48735	BFR106066	24613	60797	LMO101938	36674	72858	SPA101143
12552	48736	BFR106071	24614	60798	LMO101945	36675	72859	SPA101151
12553	48737	BFR106080	24615	60799	LMO101960	36676	72860	SPA101158
12554	48738	BFR106093	24616	60800	LMO101963	36677	72861	SPA101171
12555	48739	BFR10610	24617	60801	LMO101976	36678	72862	SPA101172
12556	48740	BFR106103	24618	60802	LMO101980	36679	72863	SPA101173
12557	48741	BFR106150	24619	60803	LMO101987	36680	72864	SPA101175
12558	48742	BFR10621	24620	60804	LMO101989	36681	72865	SPA101177
12559	48743	BFR10641	24621	60805	LMO101990	36682	72866	SPA101178
12560	48744	BFR10661	24622	60806	LMO101991	36683	72867	SPA101179
12561	48745	BFR10665	24623	60807	LMO101992	36684	72868	SPA101180
12562	48746	BFR10672	24624	60808	LMO102003	36685	72869	SPA101181
12563	48747	BFR10675	24625	60809	LMO102006	36686	72870	SPA101182
12564	48748	BFR10676	24626	60810	LMO102007	36687	72871	SPA101187
12565	48749	BFR10677	24627	60811	LMO102009	36688	72872	SPA101193
12566	48750	BFR10686	24628	60812	LMO102014	36689	72873	SPA101195
12567	48751	BFR10690	24629	60813	LMO102015	36690	72874	SPA101199
12568	48752	BFR10693	24630	60814	LMO102016	36691	72875	SPA101201
12569	48753	BFR10719	24631	60815	LMO102018	36692	72876	SPA101204
12570	48754	BFR10734	24632	60816	LMO102022	36693	72877	SPA101206
12571	48755	BFR10738	24633	60817	LMO102025	36694	72878	SPA101208
12572	48756	BFR10760	24634	60818	LMO102026	36695	72879	SPA101211
12573	48757	BFR10765	24635	60819	LMO102030	36696	72880	SPA101217
12574	48758	BFR10768	24636	60820	LMO102033	36697	72881	SPA101218
12575	48759	BFR10769	24637	60821	LMO102038	36698	72882	SPA101227
12576	48760	BFR10770	24638	60822	LMO102040	36699	72883	SPA101232
12577	48761	BFR10775	24639	60823	LMO102042	36700	72884	SPA101233
12578	48762	BFR10777	24640	60824	LMO102054	36701	72885	SPA101236
12579	48763	BFR10778	24641	60825	LMO102057	36702	72886	SPA101239
12580	48764	BFR10780	24642	60826	LMO102080	36703	72887	SPA101240
12581	48765	BFR10781	24643	60827	LMO102084	36704	72888	SPA101244
12582	48766	BFR10783	24644	60828	LMO102085	36705	72889	SPA101253
12583	48767	BFR10814	24645	60829	LMO102091	36706	72890	SPA101254
12584	48768	BFR10818	24646	60830	LMO102094	36707	72891	SPA101256
12585	48769	BFR10828	24647	60831	LMO102096	36708	72892	SPA101258
12586	48770	BFR10832	24648	60832	LMO102099	36709	72893	SPA101259
12587	48771	BFR10840	24649	60833	LMO102101	36710	72894	SPA101261
12588	48772	BFR10841	24650	60834	LMO102103	36711	72895	SPA101274
12589	48773	BFR10845	24651	60835	LMO102110	36712	72896	SPA101275
12590	48774	BFR10864	24652	60836	LMO102112	36713	72897	SPA101276

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12591	48775	BFR10866	24653	60837	LMO102115	36714	72898	SPA101277
12592	48776	BFR10873	24654	60838	LMO102125	36715	72899	SPA101278
12593	48777	BFR10875	24655	60839	LMO102136	36716	72900	SPA101279
12594	48778	BFR10878	24656	60840	LMO102138	36717	72901	SPA101282
12595	48779	BFR10882	24657	60841	LMO102140	36718	72902	SPA101283
12596	48780	BFR10883	24658	60842	LMO102143	36719	72903	SPA101285
12597	48781	BFR10884	24659	60843	LMO102149	36720	72904	SPA101296
12598	48782	BFR10892	24660	60844	LMO102155	36721	72905	SPA101299
12599	48783	BFR10905	24661	60845	LMO102156	36722	72906	SPA101308
12600	48784	BFR10908	24662	60846	LMO102163	36723	72907	SPA101311
12601	48785	BFR10916	24663	60847	LMO102167	36724	72908	SPA101312
12602	48786	BFR10923	24664	60848	LMO102173	36725	72909	SPA101314
12603	48787	BFR10945	24665	60849	LMO102174	36726	72910	SPA101315
12604	48788	BFR10950	24666	60850	LMO102179	36727	72911	SPA101329
12605	48789	BFR10990	24667	60851	LMO102180	36728	72912	SPA101338
12606	48790	BFR11001	24668	60852	LMO102184	36729	72913	SPA101340
12607	48791	BFR11005	24669	60853	LMO102187	36730	72914	SPA101351
12608	48792	BFR11006	24670	60854	LMO102191	36731	72915	SPA101358
12609	48793	BFR11007	24671	60855	LMO102194	36732	72916	SPA101365
12610	48794	BFR11026	24672	60856	LMO102202	36733	72917	SPA101378
12611	48795	BFR11028	24673	60857	LMO102204	36734	72918	SPA101379
12612	48796	BFR11030	24674	60858	LMO102205	36735	72919	SPA101380
12613	48797	BFR11037	24675	60859	LMO102215	36736	72920	SPA101389
12614	48798	BFR11044	24676	60860	LMO102223	36737	72921	SPA101395
12615	48799	BFR11051	24677	60861	LMO102225	36738	72922	SPA101398
12616	48800	BFR11086	24678	60862	LMO102229	36739	72923	SPA101404
12617	48801	BFR11093	24679	60863	LMO102230	36740	72924	SPA101410
12618	48802	BFR11102	24680	60864	LMO102232	36741	72925	SPA101415
12619	48803	BFR11118	24681	60865	LMO102234	36742	72926	SPA101417
12620	48804	BFR11151	24682	60866	LMO102241	36743	72927	SPA101428
12621	48805	BFR11164	24683	60867	LMO102242	36744	72928	SPA101433
12622	48806	BFR11172	24684	60868	LMO102246	36745	72929	SPA101434
12623	48807	BFR11177	24685	60869	LMO102252	36746	72930	SPA101441
12624	48808	BFR11190	24686	60870	LMO102254	36747	72931	SPA101448
12625	48809	BFR11201	24687	60871	LMO102257	36748	72932	SPA101449
12626	48810	BFR11202	24688	60872	LMO102271	36749	72933	SPA101461
12627	48811	BFR11210	24689	60873	LMO102272	36750	72934	SPA101468
12628	48812	BFR11211	24690	60874	LMO102288	36751	72935	SPA101471
12629	48813	BFR11213	24691	60875	LMO102292	36752	72936	SPA101473
12630	48814	BFR11219	24692	60876	LMO102293	36753	72937	SPA101478
12631	48815	BFR11237	24693	60877	LMO102295	36754	72938	SPA101480
12632	48816	BFR11240	24694	60878	LMO102296	36755	72939	SPA101481
12633	48817	BFR11247	24695	60879	LMO102303	36756	72940	SPA101487
12634	48818	BFR11249	24696	60880	LMO102309	36757	72941	SPA101490
12635	48819	BFR11263	24697	60881	LMO102312	36758	72942	SPA101492
12636	48820	BFR11272	24698	60882	LMO102315	36759	72943	SPA101502
12637	48821	BFR11277	24699	60883	LMO102317	36760	72944	SPA101511
12638	48822	BFR11285	24700	60884	LMO102322	36761	72945	SPA101514
12639	48823	BFR11289	24701	60885	LMO102324	36762	72946	SPA101520
12640	48824	BFR11299	24702	60886	LMO102329	36763	72947	SPA101521
12641	48825	BFR11305	24703	60887	LMO102330	36764	72948	SPA101522
12642	48826	BFR11308	24704	60888	LMO102338	36765	72949	SPA101524
12643	48827	BFR11309	24705	60889	LMO102341	36766	72950	SPA101525
12644	48828	BFR11333	24706	60890	LMO102346	36767	72951	SPA101526
12645	48829	BFR11337	24707	60891	LMO102350	36768	72952	SPA101528

WO 02/077183									PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12646	48830	BFR11341	24708	60892	LMO102357	36769	72953	SPA101531			
12647	48831	BFR11345	24709	60893	LMO102359	36770	72954	SPA101534			
12648	48832	BFR11357	24710	60894	LMO102362	36771	72955	SPA101536			
12649	48833	BFR11358	24711	60895	LMO102363	36772	72956	SPA101546			
12650	48834	BFR11362	24712	60896	LMO102367	36773	72957	SPA101548			
12651	48835	BFR11370	24713	60897	LMO102369	36774	72958	SPA101549			
12652	48836	BFR11372	24714	60898	LMO102370	36775	72959	SPA101556			
12653	48837	BFR11379	24715	60899	LMO102375	36776	72960	SPA101560			
12654	48838	BFR11387	24716	60900	LMO102378	36777	72961	SPA101562			
12655	48839	BFR11393	24717	60901	LMO102383	36778	72962	SPA101563			
12656	48840	BFR11395	24718	60902	LMO102390	36779	72963	SPA101565			
12657	48841	BFR11399	24719	60903	LMO102391	36780	72964	SPA101566			
12658	48842	BFR11403	24720	60904	LMO102393	36781	72965	SPA101582			
12659	48843	BFR11415	24721	60905	LMO102395	36782	72966	SPA101583			
12660	48844	BFR11417	24722	60906	LMO102397	36783	72967	SPA101586			
12661	48845	BFR11423	24723	60907	LMO102418	36784	72968	SPA101587			
12662	48846	BFR11425	24724	60908	LMO102427	36785	72969	SPA101593			
12663	48847	BFR11426	24725	60909	LMO102428	36786	72970	SPA101594			
12664	48848	BFR11427	24726	60910	LMO102429	36787	72971	SPA101599			
12665	48849	BFR11444	24727	60911	LMO102434	36788	72972	SPA101601			
12666	48850	BFR11462	24728	60912	LMO102436	36789	72973	SPA101602			
12667	48851	BFR11466	24729	60913	LMO102441	36790	72974	SPA101603			
12668	48852	BFR11469	24730	60914	LMO102454	36791	72975	SPA101612			
12669	48853	BFR11470	24731	60915	LMO102456	36792	72976	SPA101627			
12670	48854	BFR11473	24732	60916	LMO102461	36793	72977	SPA101630			
12671	48855	BFR11474	24733	60917	LMO102464	36794	72978	SPA101635			
12672	48856	BFR11476	24734	60918	LMO102467	36795	72979	SPA101637			
12673	48857	BFR11479	24735	60919	LMO102472	36796	72980	SPA101640			
12674	48858	BFR11480	24736	60920	LMO102476	36797	72981	SPA101642			
12675	48859	BFR11486	24737	60921	LMO102502	36798	72982	SPA101643			
12676	48860	BFR11487	24738	60922	LMO102506	36799	72983	SPA101649			
12677	48861	BFR11494	24739	60923	LMO102507	36800	72984	SPA101650			
12678	48862	BFR11509	24740	60924	LMO102508	36801	72985	SPA101656			
12679	48863	BFR11511	24741	60925	LMO102509	36802	72986	SPA101670			
12680	48864	BFR11516	24742	60926	LMO102513	36803	72987	SPA101671			
12681	48865	BFR11517	24743	60927	LMO102516	36804	72988	SPA101674			
12682	48866	BFR11519	24744	60928	LMO102519	36805	72989	SPA101676			
12683	48867	BFR11527	24745	60929	LMO102523	36806	72990	SPA101683			
12684	48868	BFR11529	24746	60930	LMO102528	36807	72991	SPA101687			
12685	48869	BFR11543	24747	60931	LMO102529	36808	72992	SPA101689			
12686	48870	BFR11555	24748	60932	LMO102534	36809	72993	SPA101690			
12687	48871	BFR11566	24749	60933	LMO102536	36810	72994	SPA101691			
12688	48872	BFR11585	24750	60934	LMO102538	36811	72995	SPA101695			
12689	48873	BFR11588	24751	60935	LMO102542	36812	72996	SPA101696			
12690	48874	BFR11590	24752	60936	LMO102551	36813	72997	SPA101703			
12691	48875	BFR11594	24753	60937	LMO102553	36814	72998	SPA101711			
12692	48876	BFR11611	24754	60938	LMO102556	36815	72999	SPA101712			
12693	48877	BFR11613	24755	60939	LMO102567	36816	73000	SPA101716			
12694	48878	BFR11614	24756	60940	LMO102568	36817	73001	SPA101717			
12695	48879	BFR11620	24757	60941	LMO102574	36818	73002	SPA101722			
12696	48880	BFR11621	24758	60942	LMO102587	36819	73003	SPA101723			
12697	48881	BFR11634	24759	60943	LMO102593	36820	73004	SPA101725			
12698	48882	BFR11644	24760	60944	LMO102606	36821	73005	SPA101726			
12699	48883	BFR11646	24761	60945	LMO102609	36822	73006	SPA101729			
12700	48884	BFR11654	24762	60946	LMO102611	36823	73007	SPA101733			

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12701	48885	BFR11658	24763	60947	LMO102616	36824	73008	SPA101734
12702	48886	BFR11663	24764	60948	LMO102620	36825	73009	SPA101737
12703	48887	BFR11670	24765	60949	LMO102621	36826	73010	SPA101738
12704	48888	BFR11674	24766	60950	LMO102626	36827	73011	SPA101751
12705	48889	BFR11675	24767	60951	LMO102628	36828	73012	SPA101753
12706	48890	BFR11684	24768	60952	LMO102632	36829	73013	SPA101756
12707	48891	BFR11690	24769	60953	LMO102636	36830	73014	SPA101758
12708	48892	BFR11695	24770	60954	LMO102639	36831	73015	SPA101762
12709	48893	BFR11696	24771	60955	LMO102640	36832	73016	SPA101764
12710	48894	BFR11698	24772	60956	LMO102644	36833	73017	SPA101767
12711	48895	BFR11712	24773	60957	LMO102654	36834	73018	SPA101768
12712	48896	BFR11714	24774	60958	LMO102655	36835	73019	SPA101769
12713	48897	BFR11719	24775	60959	LMO102657	36836	73020	SPA101779
12714	48898	BFR11721	24776	60960	LMO102666	36837	73021	SPA101786
12715	48899	BFR11725	24777	60961	LMO102668	36838	73022	SPA101787
12716	48900	BFR11737	24778	60962	LMO102676	36839	73023	SPA101792
12717	48901	BFR11762	24779	60963	LMO102680	36840	73024	SPA101797
12718	48902	BFR11769	24780	60964	LMO102682	36841	73025	SPA101798
12719	48903	BFR11775	24781	60965	LMO102686	36842	73026	SPA101802
12720	48904	BFR11777	24782	60966	LMO102690	36843	73027	SPA101804
12721	48905	BFR11786	24783	60967	LMO102691	36844	73028	SPA101806
12722	48906	BFR11789	24784	60968	LMO102694	36845	73029	SPA101807
12723	48907	BFR11792	24785	60969	LMO102700	36846	73030	SPA101818
12724	48908	BFR11800	24786	60970	LMO102701	36847	73031	SPA101820
12725	48909	BFR11813	24787	60971	LMO102705	36848	73032	SPA101828
12726	48910	BFR11814	24788	60972	LMO102707	36849	73033	SPA101833
12727	48911	BFR11820	24789	60973	LMO102708	36850	73034	SPA101836
12728	48912	BFR11827	24790	60974	LMO102719	36851	73035	SPA101839
12729	48913	BFR11829	24791	60975	LMO102721	36852	73036	SPA101840
12730	48914	BFR11837	24792	60976	LMO102723	36853	73037	SPA101844
12731	48915	BFR11841	24793	60977	LMO102727	36854	73038	SPA101845
12732	48916	BFR11862	24794	60978	LMO102728	36855	73039	SPA101847
12733	48917	BFR11892	24795	60979	LMO102733	36856	73040	SPA101848
12734	48918	BFR11898	24796	60980	LMO102736	36857	73041	SPA101850
12735	48919	BFR11899	24797	60981	LMO102737	36858	73042	SPA101860
12736	48920	BFR11901	24798	60982	LMO102748	36859	73043	SPA101864
12737	48921	BFR11917	24799	60983	LMO102755	36860	73044	SPA101871
12738	48922	BFR11919	24800	60984	LMO102762	36861	73045	SPA101872
12739	48923	BFR11925	24801	60985	LMO102766	36862	73046	SPA101873
12740	48924	BFR11926	24802	60986	LMO102769	36863	73047	SPA101874
12741	48925	BFR11933	24803	60987	LMO102776	36864	73048	SPA101877
12742	48926	BFR11934	24804	60988	LMO102778	36865	73049	SPA101879
12743	48927	BFR11938	24805	60989	LMO102782	36866	73050	SPA101887
12744	48928	BFR11955	24806	60990	LMO102790	36867	73051	SPA101888
12745	48929	BFR11957	24807	60991	LMO102795	36868	73052	SPA101889
12746	48930	BFR11994	24808	60992	LMO102809	36869	73053	SPA101890
12747	48931	BFR12010	24809	60993	LMO102819	36870	73054	SPA101891
12748	48932	BFR12028	24810	60994	LMO102823	36871	73055	SPA101905
12749	48933	BFR12031	24811	60995	LMO102824	36872	73056	SPA101906
12750	48934	BFR12043	24812	60996	LMO102830	36873	73057	SPA101915
12751	48935	BFR12076	24813	60997	LMO102831	36874	73058	SPA101916
12752	48936	BFR12085	24814	60998	LMO102833	36875	73059	SPA101921
12753	48937	BFR12098	24815	60999	LMO102835	36876	73060	SPA101922
12754	48938	BFR12116	24816	61000	LMO102839	36877	73061	SPA101923
12755	48939	BFR12122	24817	61001	LMO102840	36878	73062	SPA101936

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12756	48940	BFR12135	24818	61002	LMO102848	36879	73063	SPA101937
12757	48941	BFR12137	24819	61003	LMO102853	36880	73064	SPA101944
12758	48942	BFR12149	24820	61004	LMO102857	36881	73065	SPA101946
12759	48943	BFR12153	24821	61005	LMO102860	36882	73066	SPA101953
12760	48944	BFR12159	24822	61006	LMO102867	36883	73067	SPA101954
12761	48945	BFR12193	24823	61007	LMO102883	36884	73068	SPA101969
12762	48946	BFR12194	24824	61008	LMO102885	36885	73069	SPA101970
12763	48947	BFR12198	24825	61009	LMO102887	36886	73070	SPA101972
12764	48948	BFR12227	24826	61010	LMO102895	36887	73071	SPA101973
12765	48949	BFR12234	24827	61011	LMO102897	36888	73072	SPA101976
12766	48950	BFR12241	24828	61012	LMO102901	36889	73073	SPA101992
12767	48951	BFR12249	24829	61013	LMO102906	36890	73074	SPA101996
12768	48952	BFR12250	24830	61014	LMO102909	36891	73075	SPA101999
12769	48953	BFR12282	24831	61015	LMO102910	36892	73076	SPA102000
12770	48954	BFR12283	24832	61016	LMO102911	36893	73077	SPA102006
12771	48955	BFR12295	24833	61017	LMO102915	36894	73078	SPA102021
12772	48956	BFR12308	24834	61018	LMO102924	36895	73079	SPA102022
12773	48957	BFR12344	24835	61019	LMO102925	36896	73080	SPA102026
12774	48958	BFR12345	24836	61020	LMO102926	36897	73081	SPA102033
12775	48959	BFR12359	24837	61021	LMO102928	36898	73082	SPA102034
12776	48960	BFR12371	24838	61022	LMO102929	36899	73083	SPA102040
12777	48961	BFR12375	24839	61023	LMO102930	36900	73084	SPA102043
12778	48962	BFR12383	24840	61024	LMO102931	36901	73085	SPA102048
12779	48963	BFR12413	24841	61025	LMO102938	36902	73086	SPA102050
12780	48964	BFR12421	24842	61026	LPN100014	36903	73087	SPA102059
12781	48965	BFR12422	24843	61027	LPN100018	36904	73088	SPA102062
12782	48966	BFR12436	24844	61028	LPN100024	36905	73089	SPA102064
12783	48967	BFR12450	24845	61029	LPN100032	36906	73090	SPA102065
12784	48968	BFR12455	24846	61030	LPN100036	36907	73091	SPA102067
12785	48969	BFR12457	24847	61031	LPN100039	36908	73092	SPA102068
12786	48970	BFR12467	24848	61032	LPN100053	36909	73093	SPA102072
12787	48971	BFR12473	24849	61033	LPN100100	36910	73094	SPA102074
12788	48972	BFR12474	24850	61034	LPN100108	36911	73095	SPA102080
12789	48973	BFR12478	24851	61035	LPN100109	36912	73096	SPA102108
12790	48974	BFR12483	24852	61036	LPN100114	36913	73097	SPA102110
12791	48975	BFR12921	24853	61037	LPN100121	36914	73098	SPA102116
12792	48976	BFR13634	24854	61038	LPN100134	36915	73099	SPA102125
12793	48977	BFR14231	24855	61039	LPN100139	36916	73100	SPA102129
12794	48978	BFU100017	24856	61040	LPN100144	36917	73101	SPA102134
12795	48979	BFU100048	24857	61041	LPN100153	36918	73102	SPA102141
12796	48980	BFU100071	24858	61042	LPN100159	36919	73103	SPA102146
12797	48981	BFU100073	24859	61043	LPN100161	36920	73104	SPA102150
12798	48982	BFU100077	24860	61044	LPN100162	36921	73105	SPA102151
12799	48983	BFU100079	24861	61045	LPN100163	36922	73106	SPA102152
12800	48984	BFU100082	24862	61046	LPN100168	36923	73107	SPA102153
12801	48985	BFU100092	24863	61047	LPN100171	36924	73108	SPA102154
12802	48986	BFU100101	24864	61048	LPN100189	36925	73109	SPA102155
12803	48987	BFU100103	24865	61049	LPN100193	36926	73110	SPA102158
12804	48988	BFU100109	24866	61050	LPN100195	36927	73111	SPA102160
12805	48989	BFU100111	24867	61051	LPN100210	36928	73112	SPA102162
12806	48990	BFU100112	24868	61052	LPN100213	36929	73113	SPA102170
12807	48991	BFU100113	24869	61053	LPN100214	36930	73114	SPA102180
12808	48992	BFU100161	24870	61054	LPN100221	36931	73115	SPA102185
12809	48993	BFU100162	24871	61055	LPN100223	36932	73116	SPA102202
12810	48994	BFU100163	24872	61056	LPN100228	36933	73117	SPA102204

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12811	48995	BFU100165	24873	61057	LPN100247	36934	73118	SPA102210
12812	48996	BFU100174	24874	61058	LPN100258	36935	73119	SPA102211
12813	48997	BFU100176	24875	61059	LPN100259	36936	73120	SPA102212
12814	48998	BFU100180	24876	61060	LPN100265	36937	73121	SPA102213
12815	48999	BFU100183	24877	61061	LPN100279	36938	73122	SPA102215
12816	49000	BFU100198	24878	61062	LPN100282	36939	73123	SPA102216
12817	49001	BFU100199	24879	61063	LPN100294	36940	73124	SPA102217
12818	49002	BFU100212	24880	61064	LPN100304	36941	73125	SPA102218
12819	49003	BFU100214	24881	61065	LPN100305	36942	73126	SPA102223
12820	49004	BFU100216	24882	61066	LPN100314	36943	73127	SPA102250
12821	49005	BFU100218	24883	61067	LPN100325	36944	73128	SPA102272
12822	49006	BFU100232	24884	61068	LPN100326	36945	73129	SPA102280
12823	49007	BFU100233	24885	61069	LPN100331	36946	73130	SPA102291
12824	49008	BFU100247	24886	61070	LPN100340	36947	73131	SPA102297
12825	49009	BFU100260	24887	61071	LPN100345	36948	73132	SPA102307
12826	49010	BFU100267	24888	61072	LPN100348	36949	73133	SPA102308
12827	49011	BFU100268	24889	61073	LPN100369	36950	73134	SPA102312
12828	49012	BFU100269	24890	61074	LPN100384	36951	73135	SPA102318
12829	49013	BFU100270	24891	61075	LPN100393	36952	73136	SPA102319
12830	49014	BFU100271	24892	61076	LPN100405	36953	73137	SPA102320
12831	49015	BFU100272	24893	61077	LPN100410	36954	73138	SPA102322
12832	49016	BFU100273	24894	61078	LPN100418	36955	73139	SPA102323
12833	49017	BFU100274	24895	61079	LPN100428	36956	73140	SPA102325
12834	49018	BFU100276	24896	61080	LPN100434	36957	73141	SPA102327
12835	49019	BFU100277	24897	61081	LPN100436	36958	73142	SPA102336
12836	49020	BFU100278	24898	61082	LPN100438	36959	73143	SPA102343
12837	49021	BFU100279	24899	61083	LPN100442	36960	73144	SPA102354
12838	49022	BFU100280	24900	61084	LPN100444	36961	73145	SPA102356
12839	49023	BFU100324	24901	61085	LPN100452	36962	73146	SPA102370
12840	49024	BFU100346	24902	61086	LPN100459	36963	73147	SPA102371
12841	49025	BFU100359	24903	61087	LPN100461	36964	73148	SPA102374
12842	49026	BFU100360	24904	61088	LPN100464	36965	73149	SPA102382
12843	49027	BFU100376	24905	61089	LPN100471	36966	73150	SPA102393
12844	49028	BFU100380	24906	61090	LPN100473	36967	73151	SPA102395
12845	49029	BFU100381	24907	61091	LPN100476	36968	73152	SPA102396
12846	49030	BFU100382	24908	61092	LPN100480	36969	73153	SPA102407
12847	49031	BFU100383	24909	61093	LPN100481	36970	73154	SPA102412
12848	49032	BFU100384	24910	61094	LPN100482	36971	73155	SPA102415
12849	49033	BFU100385	24911	61095	LPN100488	36972	73156	SPA102422
12850	49034	BFU100386	24912	61096	LPN100501	36973	73157	SPA102433
12851	49035	BFU100387	24913	61097	LPN100506	36974	73158	SPA102439
12852	49036	BFU100388	24914	61098	LPN100508	36975	73159	SPA102449
12853	49037	BFU100389	24915	61099	LPN100516	36976	73160	SPA102453
12854	49038	BFU100390	24916	61100	LPN100517	36977	73161	SPA102458
12855	49039	BFU100391	24917	61101	LPN100519	36978	73162	SPA102459
12856	49040	BFU100399	24918	61102	LPN100520	36979	73163	SPA102463
12857	49041	BFU100400	24919	61103	LPN100523	36980	73164	SPA102470
12858	49042	BFU100404	24920	61104	LPN100524	36981	73165	SPA102475
12859	49043	BFU100405	24921	61105	LPN100532	36982	73166	SPA102476
12860	49044	BFU100406	24922	61106	LPN100538	36983	73167	SPA102479
12861	49045	BFU100407	24923	61107	LPN100559	36984	73168	SPA102480
12862	49046	BFU100408	24924	61108	LPN100571	36985	73169	SPA102485
12863	49047	BFU100415	24925	61109	LPN100583	36986	73170	SPA102493
12864	49048	BFU100449	24926	61110	LPN100587	36987	73171	SPA102524
12865	49049	BFU100454	24927	61111	LPN100590	36988	73172	SPA102528

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12866	49050	BFU100470	24928	61112	LPN100591	36989	73173	SPA102529
12867	49051	BFU100476	24929	61113	LPN100598	36990	73174	SPA102530
12868	49052	BFU100478	24930	61114	LPN100608	36991	73175	SPA102538
12869	49053	BFU100479	24931	61115	LPN100616	36992	73176	SPA102539
12870	49054	BFU100482	24932	61116	LPN100617	36993	73177	SPA102541
12871	49055	BFU100495	24933	61117	LPN100622	36994	73178	SPA102544
12872	49056	BFU100498	24934	61118	LPN100627	36995	73179	SPA102545
12873	49057	BFU100507	24935	61119	LPN100635	36996	73180	SPA102546
12874	49058	BFU100508	24936	61120	LPN100642	36997	73181	SPA102548
12875	49059	BFU100516	24937	61121	LPN100643	36998	73182	SPA102558
12876	49060	BFU100521	24938	61122	LPN100646	36999	73183	SPA102560
12877	49061	BFU100523	24939	61123	LPN100655	37000	73184	SPA102565
12878	49062	BFU100525	24940	61124	LPN100657	37001	73185	SPA102566
12879	49063	BFU100526	24941	61125	LPN100664	37002	73186	SPA102570
12880	49064	BFU100533	24942	61126	LPN100676	37003	73187	SPA102571
12881	49065	BFU100534	24943	61127	LPN100686	37004	73188	SPA102574
12882	49066	BFU100537	24944	61128	LPN100694	37005	73189	SPA102584
12883	49067	BFU100576	24945	61129	LPN100696	37006	73190	SPA102585
12884	49068	BFU100577	24946	61130	LPN100697	37007	73191	SPA102587
12885	49069	BFU100592	24947	61131	LPN100705	37008	73192	SPA102591
12886	49070	BFU100595	24948	61132	LPN100706	37009	73193	SPA102598
12887	49071	BFU100597	24949	61133	LPN100716	37010	73194	SPA102605
12888	49072	BFU100599	24950	61134	LPN100722	37011	73195	SPA102618
12889	49073	BFU100604	24951	61135	LPN100728	37012	73196	SPA102621
12890	49074	BFU100618	24952	61136	LPN100740	37013	73197	SPA102627
12891	49075	BFU100630	24953	61137	LPN100742	37014	73198	SPA102628
12892	49076	BFU100632	24954	61138	LPN100743	37015	73199	SPA102630
12893	49077	BFU100662	24955	61139	LPN100752	37016	73200	SPA102638
12894	49078	BFU100675	24956	61140	LPN100761	37017	73201	SPA102643
12895	49079	BFU100679	24957	61141	LPN100764	37018	73202	SPA102649
12896	49080	BFU100680	24958	61142	LPN100768	37019	73203	SPA102652
12897	49081	BFU100682	24959	61143	LPN100769	37020	73204	SPA102653
12898	49082	BFU100683	24960	61144	LPN100774	37021	73205	SPA102655
12899	49083	BFU100684	24961	61145	LPN100778	37022	73206	SPA102656
12900	49084	BFU100696	24962	61146	LPN100779	37023	73207	SPA102658
12901	49085	BFU100703	24963	61147	LPN100787	37024	73208	SPA102660
12902	49086	BFU100706	24964	61148	LPN100788	37025	73209	SPA102662
12903	49087	BFU100730	24965	61149	LPN100793	37026	73210	SPA102684
12904	49088	BFU100736	24966	61150	LPN100810	37027	73211	SPA102685
12905	49089	BFU100745	24967	61151	LPN100817	37028	73212	SPA102688
12906	49090	BFU100752	24968	61152	LPN100835	37029	73213	SPA102695
12907	49091	BFU100755	24969	61153	LPN100836	37030	73214	SPA102706
12908	49092	BFU100767	24970	61154	LPN100837	37031	73215	SPA102707
12909	49093	BFU100768	24971	61155	LPN100851	37032	73216	SPA102710
12910	49094	BFU100791	24972	61156	LPN100852	37033	73217	SPA102711
12911	49095	BFU100798	24973	61157	LPN100853	37034	73218	SPA102712
12912	49096	BFU100814	24974	61158	LPN100854	37035	73219	SPA102731
12913	49097	BFU100816	24975	61159	LPN100863	37036	73220	SPA102732
12914	49098	BFU100818	24976	61160	LPN100867	37037	73221	SPA102733
12915	49099	BFU100819	24977	61161	LPN100869	37038	73222	SPA102738
12916	49100	BFU100820	24978	61162	LPN100873	37039	73223	SPA102739
12917	49101	BFU100821	24979	61163	LPN100879	37040	73224	SPA102740
12918	49102	BFU100822	24980	61164	LPN100888	37041	73225	SPA102741
12919	49103	BFU100823	24981	61165	LPN100889	37042	73226	SPA102745
12920	49104	BFU100824	24982	61166	LPN100896	37043	73227	SPA102746

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12921	49105	BFU100825	24983	61167	LPN100898	37044	73228	SPA102750
12922	49106	BFU100826	24984	61168	LPN100900	37045	73229	SPA102751
12923	49107	BFU100842	24985	61169	LPN100911	37046	73230	SPA102753
12924	49108	BFU100843	24986	61170	LPN100915	37047	73231	SPA102754
12925	49109	BFU100844	24987	61171	LPN100916	37048	73232	SPA102755
12926	49110	BFU100845	24988	61172	LPN100920	37049	73233	SPA102756
12927	49111	BFU100846	24989	61173	LPN100923	37050	73234	SPA102757
12928	49112	BFU100847	24990	61174	LPN100924	37051	73235	SPA102763
12929	49113	BFU100848	24991	61175	LPN100925	37052	73236	SPA102766
12930	49114	BFU100849	24992	61176	LPN100930	37053	73237	SPA102767
12931	49115	BFU100854	24993	61177	LPN100954	37054	73238	SPA102770
12932	49116	BFU100858	24994	61178	LPN100956	37055	73239	SPA102785
12933	49117	BFU100864	24995	61179	LPN100959	37056	73240	SPA102789
12934	49118	BFU100866	24996	61180	LPN100962	37057	73241	SPA102792
12935	49119	BFU100867	24997	61181	LPN100965	37058	73242	SPA102794
12936	49120	BFU100868	24998	61182	LPN100968	37059	73243	SPA102795
12937	49121	BFU100907	24999	61183	LPN100982	37060	73244	SPA102796
12938	49122	BFU100939	25000	61184	LPN100988	37061	73245	SPA102798
12939	49123	BFU100945	25001	61185	LPN100990	37062	73246	SPA102801
12940	49124	BFU100947	25002	61186	LPN100995	37063	73247	SPA102802
12941	49125	BFU100950	25003	61187	LPN101006	37064	73248	SPA102803
12942	49126	BFU100954	25004	61188	LPN101016	37065	73249	SPA102806
12943	49127	BFU100980	25005	61189	LPN101017	37066	73250	SPA102808
12944	49128	BFU100991	25006	61190	LPN101018	37067	73251	SPA102812
12945	49129	BFU100993	25007	61191	LPN101026	37068	73252	SPA102819
12946	49130	BFU100995	25008	61192	LPN101041	37069	73253	SPA102820
12947	49131	BFU101014	25009	61193	LPN101049	37070	73254	SPA102828
12948	49132	BFU101022	25010	61194	LPN101055	37071	73255	SPA102831
12949	49133	BFU101027	25011	61195	LPN101085	37072	73256	SPA102834
12950	49134	BFU101036	25012	61196	LPN101088	37073	73257	SPA102836
12951	49135	BFU101038	25013	61197	LPN101097	37074	73258	SPA102837
12952	49136	BFU101050	25014	61198	LPN101111	37075	73259	SPA102841
12953	49137	BFU101051	25015	61199	LPN101116	37076	73260	SPA102842
12954	49138	BFU101073	25016	61200	LPN101126	37077	73261	SPA102846
12955	49139	BFU101074	25017	61201	LPN101129	37078	73262	SPA102856
12956	49140	BFU101081	25018	61202	LPN101130	37079	73263	SPA102874
12957	49141	BFU101094	25019	61203	LPN101135	37080	73264	SPA102876
12958	49142	BFU101096	25020	61204	LPN101141	37081	73265	SPA102883
12959	49143	BFU101107	25021	61205	LPN101153	37082	73266	SPA102886
12960	49144	BFU101113	25022	61206	LPN101155	37083	73267	SPA102897
12961	49145	BFU101118	25023	61207	LPN101161	37084	73268	SPA102906
12962	49146	BFU101121	25024	61208	LPN101162	37085	73269	SPA102908
12963	49147	BFU101138	25025	61209	LPN101167	37086	73270	SPA102910
12964	49148	BFU101142	25026	61210	LPN101177	37087	73271	SPA102914
12965	49149	BFU101145	25027	61211	LPN101178	37088	73272	SPA102916
12966	49150	BFU101148	25028	61212	LPN101186	37089	73273	SPA102917
12967	49151	BFU101149	25029	61213	LPN101189	37090	73274	SPA102924
12968	49152	BFU101154	25030	61214	LPN101194	37091	73275	SPA102933
12969	49153	BFU101157	25031	61215	LPN101208	37092	73276	SPA102935
12970	49154	BFU101165	25032	61216	LPN101209	37093	73277	SPA102936
12971	49155	BFU101166	25033	61217	LPN101227	37094	73278	SPA102938
12972	49156	BFU101173	25034	61218	LPN101229	37095	73279	SPA102939
12973	49157	BFU101199	25035	61219	LPN101231	37096	73280	SPA102952
12974	49158	BFU101208	25036	61220	LPN101240	37097	73281	SPA102961
12975	49159	BFU101210	25037	61221	LPN101241	37098	73282	SPA102971

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
12976	49160	BFU101219	25038	61222	LPN101252	37099	73283	SPA102972
12977	49161	BFU101224	25039	61223	LPN101253	37100	73284	SPA102974
12978	49162	BFU101229	25040	61224	LPN101257	37101	73285	SPA102976
12979	49163	BFU101230	25041	61225	LPN101264	37102	73286	SPA102977
12980	49164	BFU101231	25042	61226	LPN101272	37103	73287	SPA102978
12981	49165	BFU101232	25043	61227	LPN101283	37104	73288	SPA102979
12982	49166	BFU101233	25044	61228	LPN101284	37105	73289	SPA102980
12983	49167	BFU101239	25045	61229	LPN101285	37106	73290	SPA102982
12984	49168	BFU101254	25046	61230	LPN101295	37107	73291	SPA102989
12985	49169	BFU101273	25047	61231	LPN101298	37108	73292	SPA102993
12986	49170	BFU101276	25048	61232	LPN101316	37109	73293	SPA102996
12987	49171	BFU101289	25049	61233	LPN101317	37110	73294	SPA102997
12988	49172	BFU101296	25050	61234	LPN101324	37111	73295	SPA102998
12989	49173	BFU101300	25051	61235	LPN101338	37112	73296	SPA103001
12990	49174	BFU101321	25052	61236	LPN101342	37113	73297	SPA103008
12991	49175	BFU101343	25053	61237	LPN101348	37114	73298	SPA103010
12992	49176	BFU101346	25054	61238	LPN101352	37115	73299	SPA103016
12993	49177	BFU101347	25055	61239	LPN101358	37116	73300	SPA103017
12994	49178	BFU101352	25056	61240	LPN101363	37117	73301	SPA103023
12995	49179	BFU101355	25057	61241	LPN101369	37118	73302	SPA103024
12996	49180	BFU101358	25058	61242	LPN101370	37119	73303	SPA103028
12997	49181	BFU101371	25059	61243	LPN101375	37120	73304	SPA103032
12998	49182	BFU101390	25060	61244	LPN101389	37121	73305	SPA103039
12999	49183	BFU101391	25061	61245	LPN101390	37122	73306	SPA103041
13000	49184	BFU101392	25062	61246	LPN101401	37123	73307	SPA103053
13001	49185	BFU101396	25063	61247	LPN101403	37124	73308	SPA103063
13002	49186	BFU101441	25064	61248	LPN101405	37125	73309	SPA103064
13003	49187	BFU101445	25065	61249	LPN101410	37126	73310	SPA103066
13004	49188	BFU101450	25066	61250	LPN101418	37127	73311	SPA103068
13005	49189	BFU101460	25067	61251	LPN101429	37128	73312	SPA103073
13006	49190	BFU101488	25068	61252	LPN101432	37129	73313	SPA103077
13007	49191	BFU101491	25069	61253	LPN101435	37130	73314	SPA103081
13008	49192	BFU101498	25070	61254	LPN101443	37131	73315	SPA103088
13009	49193	BFU101500	25071	61255	LPN101449	37132	73316	SPA103099
13010	49194	BFU101504	25072	61256	LPN101451	37133	73317	SPA103104
13011	49195	BFU101514	25073	61257	LPN101454	37134	73318	SPA103107
13012	49196	BFU101528	25074	61258	LPN101460	37135	73319	SPA103110
13013	49197	BFU101537	25075	61259	LPN101461	37136	73320	SPA103111
13014	49198	BFU101538	25076	61260	LPN101462	37137	73321	SPA103113
13015	49199	BFU101555	25077	61261	LPN101463	37138	73322	SPA103117
13016	49200	BFU101557	25078	61262	LPN101472	37139	73323	SPA103118
13017	49201	BFU101558	25079	61263	LPN101474	37140	73324	SPA103120
13018	49202	BFU101559	25080	61264	LPN101476	37141	73325	SPA103123
13019	49203	BFU101564	25081	61265	LPN101477	37142	73326	SPA103124
13020	49204	BFU101573	25082	61266	LPN101493	37143	73327	SPA103125
13021	49205	BFU101584	25083	61267	LPN101495	37144	73328	SPA103126
13022	49206	BFU101594	25084	61268	LPN101502	37145	73329	SPA103128
13023	49207	BFU101595	25085	61269	LPN101508	37146	73330	SPA103134
13024	49208	BFU101596	25086	61270	LPN101514	37147	73331	SPA103143
13025	49209	BFU101597	25087	61271	LPN101519	37148	73332	SPA103146
13026	49210	BFU101599	25088	61272	LPN101520	37149	73333	SPA103147
13027	49211	BFU101626	25089	61273	LPN101523	37150	73334	SPA103149
13028	49212	BFU101638	25090	61274	LPN101529	37151	73335	SPA103154
13029	49213	BFU101647	25091	61275	LPN101532	37152	73336	SPA103158
13030	49214	BFU101657	25092	61276	LPN101546	37153	73337	SPA103161

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13031	49215	BFU101663	25093	61277	LPN101554	37154	73338	SPA103168
13032	49216	BFU101670	25094	61278	LPN101555	37155	73339	SPA103175
13033	49217	BFU101680	25095	61279	LPN101562	37156	73340	SPA103176
13034	49218	BFU101681	25096	61280	LPN101572	37157	73341	SPA103178
13035	49219	BFU101687	25097	61281	LPN101576	37158	73342	SPA103180
13036	49220	BFU101703	25098	61282	LPN101587	37159	73343	SPA103181
13037	49221	BFU101706	25099	61283	LPN101590	37160	73344	SPA103182
13038	49222	BFU101725	25100	61284	LPN101592	37161	73345	SPA103183
13039	49223	BFU101728	25101	61285	LPN101593	37162	73346	SPA103184
13040	49224	BFU101736	25102	61286	LPN101596	37163	73347	SPA103191
13041	49225	BFU101740	25103	61287	LPN101597	37164	73348	SPA103196
13042	49226	BFU101746	25104	61288	LPN101606	37165	73349	SPA103206
13043	49227	BFU101750	25105	61289	LPN101607	37166	73350	SPA103215
13044	49228	BFU101752	25106	61290	LPN101609	37167	73351	SPA103216
13045	49229	BFU101753	25107	61291	LPN101615	37168	73352	SPA103217
13046	49230	BFU101790	25108	61292	LPN101618	37169	73353	SPA103220
13047	49231	BFU101821	25109	61293	LPN101622	37170	73354	SPA103227
13048	49232	BFU101823	25110	61294	LPN101626	37171	73355	SPA103241
13049	49233	BFU101829	25111	61295	LPN101631	37172	73356	SPA103242
13050	49234	BFU101848	25112	61296	LPN101639	37173	73357	SPA103252
13051	49235	BFU101858	25113	61297	LPN101642	37174	73358	SPA103259
13052	49236	BFU101860	25114	61298	LPN101645	37175	73359	SPA103272
13053	49237	BFU101867	25115	61299	LPN101662	37176	73360	SPA103275
13054	49238	BFU101876	25116	61300	LPN101663	37177	73361	SPA103278
13055	49239	BFU101932	25117	61301	LPN101679	37178	73362	SPA103281
13056	49240	BFU101934	25118	61302	LPN101684	37179	73363	SPA103282
13057	49241	BFU101939	25119	61303	LPN101696	37180	73364	SPA103290
13058	49242	BFU101941	25120	61304	LPN101701	37181	73365	SPA103293
13059	49243	BFU101944	25121	61305	LPN101703	37182	73366	SPA103296
13060	49244	BFU101947	25122	61306	LPN101706	37183	73367	SPA103297
13061	49245	BFU101987	25123	61307	LPN101707	37184	73368	SPA103312
13062	49246	BFU101996	25124	61308	LPN101708	37185	73369	SPA103313
13063	49247	BFU102001	25125	61309	LPN101710	37186	73370	SPA103314
13064	49248	BFU102012	25126	61310	LPN101720	37187	73371	SPA103316
13065	49249	BFU102030	25127	61311	LPN101724	37188	73372	SPA103322
13066	49250	BFU102033	25128	61312	LPN101729	37189	73373	SPA103323
13067	49251	BFU102051	25129	61313	LPN101740	37190	73374	SPA103331
13068	49252	BFU102061	25130	61314	LPN101746	37191	73375	SPA103341
13069	49253	BFU102064	25131	61315	LPN101764	37192	73376	SPA103343
13070	49254	BFU102065	25132	61316	LPN101771	37193	73377	SPA103344
13071	49255	BFU102066	25133	61317	LPN101775	37194	73378	SPA103363
13072	49256	BFU102067	25134	61318	LPN101785	37195	73379	SPA103375
13073	49257	BFU102068	25135	61319	LPN101798	37196	73380	SPA103381
13074	49258	BFU102072	25136	61320	LPN101809	37197	73381	SPA103388
13075	49259	BFU102075	25137	61321	LPN101816	37198	73382	SPA103397
13076	49260	BFU102076	25138	61322	LPN101818	37199	73383	SPA103398
13077	49261	BFU102079	25139	61323	LPN101832	37200	73384	SPA103402
13078	49262	BFU102083	25140	61324	LPN101834	37201	73385	SPA103404
13079	49263	BFU102105	25141	61325	LPN101854	37202	73386	SPA103406
13080	49264	BFU102111	25142	61326	LPN101860	37203	73387	SPA103407
13081	49265	BFU102148	25143	61327	LPN101866	37204	73388	SPA103408
13082	49266	BFU102154	25144	61328	LPN101884	37205	73389	SPA103410
13083	49267	BFU102156	25145	61329	LPN101888	37206	73390	SPA103411
13084	49268	BFU102165	25146	61330	LPN101898	37207	73391	SPA103415
13085	49269	BFU102258	25147	61331	LPN101900	37208	73392	SPA103416

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13086	49270	BFU102292	25148	61332	LPN101913	37209	73393	SPA103418
13087	49271	BFU102304	25149	61333	LPN101924	37210	73394	SPA103428
13088	49272	BFU102307	25150	61334	LPN101927	37211	73395	SPA103429
13089	49273	BFU102313	25151	61335	LPN101936	37212	73396	SPA103434
13090	49274	BFU102327	25152	61336	LPN101937	37213	73397	SPA103436
13091	49275	BFU102333	25153	61337	LPN101940	37214	73398	SPA103439
13092	49276	BFU102341	25154	61338	LPN101961	37215	73399	SPA103443
13093	49277	BFU102346	25155	61339	LPN101974	37216	73400	SPA103445
13094	49278	BFU102348	25156	61340	LPN101981	37217	73401	SPA103450
13095	49279	BFU102350	25157	61341	LPN101987	37218	73402	SPA103454
13096	49280	BFU102353	25158	61342	LPN101988	37219	73403	SPA103461
13097	49281	BFU102354	25159	61343	LPN101990	37220	73404	SPA103466
13098	49282	BFU102355	25160	61344	LPN101992	37221	73405	SPA103469
13099	49283	BFU102356	25161	61345	LPN101995	37222	73406	SPA103470
13100	49284	BFU102357	25162	61346	LPN101998	37223	73407	SPA103471
13101	49285	BFU102358	25163	61347	LPN102009	37224	73408	SPA103480
13102	49286	BFU102359	25164	61348	LPN102025	37225	73409	SPA103481
13103	49287	BFU102363	25165	61349	LPN102050	37226	73410	SPA103486
13104	49288	BFU102365	25166	61350	LPN102055	37227	73411	SPA103511
13105	49289	BFU102389	25167	61351	LPN102062	37228	73412	SPA103512
13106	49290	BFU102395	25168	61352	LPN102073	37229	73413	SPA103513
13107	49291	BFU102407	25169	61353	LPN102084	37230	73414	SPA103515
13108	49292	BFU102443	25170	61354	LPN102086	37231	73415	SPA103518
13109	49293	BFU102444	25171	61355	LPN102089	37232	73416	SPA103524
13110	49294	BFU102456	25172	61356	LPN102090	37233	73417	SPA103528
13111	49295	BFU102473	25173	61357	LPN102097	37234	73418	SPA103529
13112	49296	BFU102476	25174	61358	LPN102108	37235	73419	SPA103530
13113	49297	BFU102498	25175	61359	LPN102112	37236	73420	SPA103535
13114	49298	BFU102499	25176	61360	LPN102113	37237	73421	SPA103542
13115	49299	BFU102502	25177	61361	LPN102115	37238	73422	SPA103543
13116	49300	BFU102503	25178	61362	LPN102121	37239	73423	SPA103545
13117	49301	BFU102511	25179	61363	LPN102124	37240	73424	SPA103555
13118	49302	BFU102513	25180	61364	LPN102134	37241	73425	SPA103556
13119	49303	BFU102518	25181	61365	LPN102136	37242	73426	SPA103570
13120	49304	BFU102520	25182	61366	LPN102138	37243	73427	SPA103571
13121	49305	BFU102555	25183	61367	LPN102139	37244	73428	SPA103572
13122	49306	BFU102571	25184	61368	LPN102152	37245	73429	SPA103576
13123	49307	BFU102576	25185	61369	LPN102155	37246	73430	SPA103579
13124	49308	BFU102581	25186	61370	LPN102178	37247	73431	SPA103596
13125	49309	BFU102583	25187	61371	LPN102188	37248	73432	SPA103608
13126	49310	BFU102584	25188	61372	LPN102191	37249	73433	SPA103626
13127	49311	BFU102587	25189	61373	LPN102197	37250	73434	SPA103628
13128	49312	BFU102589	25190	61374	LPN102202	37251	73435	SPA103631
13129	49313	BFU102591	25191	61375	LPN102205	37252	73436	SPA103636
13130	49314	BFU102595	25192	61376	LPN102216	37253	73437	SPA103638
13131	49315	BFU102597	25193	61377	LPN102221	37254	73438	SPA103652
13132	49316	BFU102598	25194	61378	LPN102226	37255	73439	SPA103653
13133	49317	BFU102599	25195	61379	LPN102227	37256	73440	SPA103654
13134	49318	BFU102600	25196	61380	LPN102231	37257	73441	SPA103660
13135	49319	BFU102611	25197	61381	LPN102235	37258	73442	SPA103662
13136	49320	BFU102617	25198	61382	LPN102252	37259	73443	SPA103678
13137	49321	BFU102622	25199	61383	LPN102261	37260	73444	SPA103688
13138	49322	BFU102625	25200	61384	LPN102267	37261	73445	SPA103696
13139	49323	BFU102626	25201	61385	LPN102268	37262	73446	SPA103699
13140	49324	BFU102630	25202	61386	LPN102283	37263	73447	SPA103705

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13141	49325	BFU102631	25203	61387	LPN102284	37264	73448	SPA103706
13142	49326	BFU102634	25204	61388	LPN102297	37265	73449	SPA103719
13143	49327	BFU102636	25205	61389	LPN102310	37266	73450	SPA103721
13144	49328	BFU102640	25206	61390	LPN102317	37267	73451	SPA103730
13145	49329	BFU102642	25207	61391	LPN102321	37268	73452	SPA103732
13146	49330	BFU102649	25208	61392	LPN102324	37269	73453	SPA103735
13147	49331	BFU102654	25209	61393	LPN102332	37270	73454	SPA103746
13148	49332	BFU102660	25210	61394	LPN102343	37271	73455	SPA103747
13149	49333	BFU102661	25211	61395	LPN102350	37272	73456	SPA103748
13150	49334	BFU102678	25212	61396	LPN102353	37273	73457	SPA103752
13151	49335	BFU102694	25213	61397	LPN102354	37274	73458	SPA103753
13152	49336	BFU102699	25214	61398	LPN102366	37275	73459	SPA103757
13153	49337	BFU102702	25215	61399	LPN102372	37276	73460	SPA103767
13154	49338	BFU102708	25216	61400	LPN102387	37277	73461	SPA103770
13155	49339	BFU102709	25217	61401	LPN102390	37278	73462	SPA103771
13156	49340	BFU102711	25218	61402	LPN102392	37279	73463	SPA103776
13157	49341	BFU102712	25219	61403	LPN102404	37280	73464	SPA103777
13158	49342	BFU102714	25220	61404	LPN102408	37281	73465	SPA103792
13159	49343	BFU102715	25221	61405	LPN102412	37282	73466	SPA103810
13160	49344	BFU102716	25222	61406	LPN102414	37283	73467	SPA103812
13161	49345	BFU102717	25223	61407	LPN102418	37284	73468	SPA103813
13162	49346	BFU102720	25224	61408	LPN102433	37285	73469	SPA103838
13163	49347	BFU102721	25225	61409	LPN102439	37286	73470	SPA103847
13164	49348	BFU102731	25226	61410	LPN102440	37287	73471	SPA103848
13165	49349	BFU102739	25227	61411	LPN102441	37288	73472	SPA103850
13166	49350	BFU102740	25228	61412	LPN102451	37289	73473	SPA103851
13167	49351	BFU102747	25229	61413	LPN102459	37290	73474	SPA103852
13168	49352	BFU102753	25230	61414	LPN102471	37291	73475	SPA103853
13169	49353	BFU102756	25231	61415	LPN102475	37292	73476	SPA103863
13170	49354	BFU102771	25232	61416	LPN102481	37293	73477	SPA103864
13171	49355	BFU102806	25233	61417	LPN102482	37294	73478	SPA103867
13172	49356	BFU102808	25234	61418	LPN102483	37295	73479	SPA103879
13173	49357	BFU102831	25235	61419	LPN102484	37296	73480	SPA103880
13174	49358	BFU102835	25236	61420	LPN102488	37297	73481	SPA103881
13175	49359	BFU102841	25237	61421	LPN102500	37298	73482	SPA103882
13176	49360	BFU102845	25238	61422	LPN102504	37299	73483	SPA103885
13177	49361	BFU102860	25239	61423	LPN102505	37300	73484	SPA103890
13178	49362	BFU102868	25240	61424	LPN102506	37301	73485	SPA103892
13179	49363	BFU102894	25241	61425	LPN102510	37302	73486	SPA103893
13180	49364	BFU102896	25242	61426	LPN102511	37303	73487	SPA103897
13181	49365	BFU102903	25243	61427	LPN102520	37304	73488	SPA103907
13182	49366	BFU102908	25244	61428	LPN102528	37305	73489	SPA103909
13183	49367	BFU102916	25245	61429	LPN102533	37306	73490	SPA103912
13184	49368	BFU102918	25246	61430	LPN102537	37307	73491	SPA103913
13185	49369	BFU102922	25247	61431	LPN102542	37308	73492	SPA103914
13186	49370	BFU102927	25248	61432	LPN102543	37309	73493	SPA103916
13187	49371	BFU102931	25249	61433	LPN102544	37310	73494	SPA103925
13188	49372	BFU102984	25250	61434	LPN102554	37311	73495	SPA103927
13189	49373	BFU102990	25251	61435	LPN102556	37312	73496	SPA103931
13190	49374	BFU102993	25252	61436	LPN102566	37313	73497	SPA103932
13191	49375	BFU103000	25253	61437	LPN102575	37314	73498	SPA103939
13192	49376	BFU103004	25254	61438	LPN102579	37315	73499	SPA103940
13193	49377	BFU103011	25255	61439	LPN102581	37316	73500	SPA103946
13194	49378	BFU103016	25256	61440	LPN102583	37317	73501	SPA103949
13195	49379	BFU103019	25257	61441	LPN102588	37318	73502	SPA103953

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13196	49380	BFU103022	25258	61442	LPN102590	37319	73503	SPA103964
13197	49381	BFU103037	25259	61443	LPN102596	37320	73504	SPA103965
13198	49382	BFU103057	25260	61444	LPN102597	37321	73505	SPA103978
13199	49383	BFU103077	25261	61445	LPN102605	37322	73506	SPA103998
13200	49384	BFU103121	25262	61446	LPN102612	37323	73507	SPA104004
13201	49385	BFU103132	25263	61447	LPN102617	37324	73508	SPA104023
13202	49386	BFU103134	25264	61448	LPN102619	37325	73509	SPA104025
13203	49387	BFU103146	25265	61449	LPN102640	37326	73510	SPA104027
13204	49388	BFU103150	25266	61450	LPN102643	37327	73511	SPA104029
13205	49389	BFU103152	25267	61451	LPN102648	37328	73512	SPA104031
13206	49390	BFU103157	25268	61452	LPN102651	37329	73513	SPA104033
13207	49391	BFU103167	25269	61453	LPN102659	37330	73514	SPA104034
13208	49392	BFU103168	25270	61454	LPN102662	37331	73515	SPA104038
13209	49393	BFU103170	25271	61455	LPN102663	37332	73516	SPA104044
13210	49394	BFU103174	25272	61456	LPN102667	37333	73517	SPA104049
13211	49395	BFU103175	25273	61457	LPN102672	37334	73518	SPA104052
13212	49396	BFU103182	25274	61458	LPN102694	37335	73519	SPA104056
13213	49397	BFU103183	25275	61459	LPN102698	37336	73520	SPA104062
13214	49398	BFU103184	25276	61460	LPN102745	37337	73521	SPA104075
13215	49399	BFU103189	25277	61461	LPN102746	37338	73522	SPA104078
13216	49400	BFU103203	25278	61462	LPN102747	37339	73523	SPA104080
13217	49401	BFU103213	25279	61463	LPN102764	37340	73524	SPA104129
13218	49402	BFU103218	25280	61464	LPN102776	37341	73525	SPA104151
13219	49403	BFU103220	25281	61465	LPN102781	37342	73526	SPA104168
13220	49404	BFU103222	25282	61466	LPN102788	37343	73527	SPA104183
13221	49405	BFU103224	25283	61467	LPN102792	37344	73528	SPA104184
13222	49406	BFU103226	25284	61468	LPN102814	37345	73529	SPA104187
13223	49407	BFU103241	25285	61469	LPN102830	37346	73530	SPA104198
13224	49408	BFU103244	25286	61470	LPN102841	37347	73531	SPA104199
13225	49409	BFU103245	25287	61471	LPN102846	37348	73532	SPA104210
13226	49410	BFU103253	25288	61472	LPN102850	37349	73533	SPA104215
13227	49411	BFU103281	25289	61473	LPN102855	37350	73534	SPA104230
13228	49412	BFU103301	25290	61474	LPN102857	37351	73535	SPA104232
13229	49413	BFU103302	25291	61475	LPN102872	37352	73536	SPA104234
13230	49414	BFU103304	25292	61476	LPN102878	37353	73537	SPA104236
13231	49415	BFU103306	25293	61477	LPN102879	37354	73538	SPA104265
13232	49416	BFU103313	25294	61478	LPN102893	37355	73539	SPA104286
13233	49417	BFU103320	25295	61479	LPN102896	37356	73540	SPA104299
13234	49418	BFU103333	25296	61480	LPN102898	37357	73541	SPA104301
13235	49419	BFU103343	25297	61481	LPN102911	37358	73542	SPA104302
13236	49420	BFU103359	25298	61482	LPN102913	37359	73543	SPA104303
13237	49421	BFU103363	25299	61483	LPN102926	37360	73544	SPA104305
13238	49422	BFU103366	25300	61484	LPN102929	37361	73545	SPA104307
13239	49423	BFU103369	25301	61485	LPN102930	37362	73546	SPA104309
13240	49424	BFU103371	25302	61486	LPN102938	37363	73547	SPA104310
13241	49425	BFU103387	25303	61487	LPN102947	37364	73548	SPA104311
13242	49426	BFU103391	25304	61488	LPN102949	37365	73549	SPA104312
13243	49427	BFU103395	25305	61489	LPN102953	37366	73550	SPA104313
13244	49428	BFU103399	25306	61490	LPN102962	37367	73551	SPA104314
13245	49429	BFU103402	25307	61491	LPN102964	37368	73552	SPA104315
13246	49430	BFU103403	25308	61492	LPN102982	37369	73553	SPA104316
13247	49431	BFU103412	25309	61493	LPN102983	37370	73554	SPA104317
13248	49432	BFU103415	25310	61494	LPN102990	37371	73555	SPA104318
13249	49433	BFU103416	25311	61495	LPN102993	37372	73556	SPA104319
13250	49434	BFU103417	25312	61496	LPN102997	37373	73557	SPA104320

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13251	49435	BFU103430	25313	61497	LPN103001	37374	73558	SPA104321
13252	49436	BFU103431	25314	61498	LPN103004	37375	73559	SPA104323
13253	49437	BFU103444	25315	61499	LPN103006	37376	73560	SPA104324
13254	49438	BFU103452	25316	61500	LPN103008	37377	73561	SPA104326
13255	49439	BFU103468	25317	61501	LPN103014	37378	73562	SPA104328
13256	49440	BFU103471	25318	61502	LPN103035	37379	73563	SPA104330
13257	49441	BFU103478	25319	61503	LPN103037	37380	73564	SPA104331
13258	49442	BFU103486	25320	61504	LPN103064	37381	73565	SPA104332
13259	49443	BFU103489	25321	61505	LPN103077	37382	73566	SPA104333
13260	49444	BFU103492	25322	61506	LPN103085	37383	73567	SPA104334
13261	49445	BFU103494	25323	61507	LPN103089	37384	73568	SPA104335
13262	49446	BFU103498	25324	61508	LPN103093	37385	73569	SPA104338
13263	49447	BFU103501	25325	61509	LPN103102	37386	73570	SPA104345
13264	49448	BFU103508	25326	61510	LPN103112	37387	73571	SPA104347
13265	49449	BFU103511	25327	61511	LPN103118	37388	73572	SPA104349
13266	49450	BFU103516	25328	61512	LPN103124	37389	73573	SPA104351
13267	49451	BFU103519	25329	61513	LPN103126	37390	73574	SPA104355
13268	49452	BFU103521	25330	61514	LPN103127	37391	73575	SPA104362
13269	49453	BFU103522	25331	61515	LPN103135	37392	73576	SPA104369
13270	49454	BFU103523	25332	61516	LPN103143	37393	73577	SPA104405
13271	49455	BFU103526	25333	61517	LPN103150	37394	73578	SPA104494
13272	49456	BFU103528	25334	61518	LPN103151	37395	73579	SPA104517
13273	49457	BFU103535	25335	61519	LPN103152	37396	73580	SPA104676
13274	49458	BFU103546	25336	61520	LPN103162	37397	73581	SPA104864
13275	49459	BFU103555	25337	61521	LPN103164	37398	73582	SPA104959
13276	49460	BFU103576	25338	61522	LPN103173	37399	73583	SPA105037
13277	49461	BFU103577	25339	61523	LPN103175	37400	73584	SPA105071
13278	49462	BFU103585	25340	61524	LPN103186	37401	73585	SPA105152
13279	49463	BFU103586	25341	61525	LPN103187	37402	73586	SPA105251
13280	49464	BFU103591	25342	61526	LPN103194	37403	73587	SPA105253
13281	49465	BFU103598	25343	61527	LPN103200	37404	73588	SPA105363
13282	49466	BFU103600	25344	61528	LPN103215	37405	73589	SPA105501
13283	49467	BFU103608	25345	61529	LPN103222	37406	73590	SPA105536
13284	49468	BFU103630	25346	61530	LPN103227	37407	73591	SPA105546
13285	49469	BFU103667	25347	61531	LPN103244	37408	73592	SPA105667
13286	49470	BFU103699	25348	61532	LPN103251	37409	73593	SPA106013
13287	49471	BFU103716	25349	61533	LPN103257	37410	73594	SPA106070
13288	49472	BFU103784	25350	61534	LPN103264	37411	73595	SPA106081
13289	49473	BFU103812	25351	61535	LPN103276	37412	73596	SPA106169
13290	49474	BFU103848	25352	61536	LPN103285	37413	73597	SPA106189
13291	49475	BFU103878	25353	61537	LPN103288	37414	73598	SPA106196
13292	49476	BFU103895	25354	61538	LPN103299	37415	73599	SPA106234
13293	49477	BFU103897	25355	61539	LPN103302	37416	73600	SPA106249
13294	49478	BFU103900	25356	61540	LPN103304	37417	73601	SPA106331
13295	49479	BFU103929	25357	61541	LPN103319	37418	73602	SPA106334
13296	49480	BFU103969	25358	61542	LPN103326	37419	73603	SPA106377
13297	49481	BFU104019	25359	61543	LPN103327	37420	73604	SPA106438
13298	49482	BFU104042	25360	61544	LPN103343	37421	73605	SPA106506
13299	49483	BFU104105	25361	61545	LPN103344	37422	73606	SPA106546
13300	49484	BFU104113	25362	61546	LPN103347	37423	73607	SPA106549
13301	49485	BFU104126	25363	61547	LPN103351	37424	73608	SPA106733
13302	49486	BFU104191	25364	61548	LPN103355	37425	73609	SPA106841
13303	49487	BFU104253	25365	61549	LPN103357	37426	73610	SPA106865
13304	49488	BFU104257	25366	61550	LPN103370	37427	73611	SPA106948
13305	49489	BFU104263	25367	61551	LPN103373	37428	73612	SPA107052

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13306	49490	BFU104281	25368	61552	LPN103376	37429	73613	SPA107090
13307	49491	BFU104282	25369	61553	LPN103383	37430	73614	SPA107137
13308	49492	BFU104286	25370	61554	LPN103390	37431	73615	SPA107646
13309	49493	BFU104304	25371	61555	LPN103391	37432	73616	SPA107834
13310	49494	BFU104326	25372	61556	LPN103397	37433	73617	SPA107849
13311	49495	BFU104367	25373	61557	LPN103398	37434	73618	SPA108738
13312	49496	BFU104372	25374	61558	LPN103411	37435	73619	SPA108751
13313	49497	BFU104375	25375	61559	LPN103417	37436	73620	SPA108753
13314	49498	BFU104396	25376	61560	LPN103418	37437	73621	SPA109612
13315	49499	BFU104436	25377	61561	LPN103427	37438	73622	SPA109618
13316	49500	BFU104448	25378	61562	LPN103433	37439	73623	SPA109709
13317	49501	BFU104450	25379	61563	LPN103438	37440	73624	SPA109961
13318	49502	BFU104508	25380	61564	LPN103463	37441	73625	SPA109962
13319	49503	BFU104512	25381	61565	LPN103478	37442	73626	SPN102057
13320	49504	BFU104514	25382	61566	LPN103483	37443	73627	SPN102327
13321	49505	BFU104521	25383	61567	LPN103487	37444	73628	SPN102747
13322	49506	BFU104726	25384	61568	LPN103488	37445	73629	SPN102801
13323	49507	BFU104727	25385	61569	LPN103492	37446	73630	SPN102832
13324	49508	BFU104735	25386	61570	LPN103500	37447	73631	SPN102932
13325	49509	BFU104746	25387	61571	LPN103510	37448	73632	SPN103406
13326	49510	BFU104800	25388	61572	LPN103520	37449	73633	SPN103482
13327	49511	BFU104827	25389	61573	LPN103526	37450	73634	SPN103543
13328	49512	BFU104873	25390	61574	LPN103528	37451	73635	SPN103672
13329	49513	BFU104892	25391	61575	LPN103537	37452	73636	SPN200328
13330	49514	BFU104903	25392	61576	LPN103539	37453	73637	SPN200349
13331	49515	BFU104929	25393	61577	LPN103541	37454	73638	SPN200508
13332	49516	BFU104942	25394	61578	LPN103544	37455	73639	SPN200521
13333	49517	BFU104983	25395	61579	LPN103564	37456	73640	SPN200817
13334	49518	BFU105028	25396	61580	LPN103565	37457	73641	SPN200887
13335	49519	BFU105039	25397	61581	LPN103574	37458	73642	SPN201072
13336	49520	BFU105060	25398	61582	LPN103576	37459	73643	SPN201097
13337	49521	BFU105062	25399	61583	LPN103586	37460	73644	SPN201140
13338	49522	BFU105066	25400	61584	LPN103589	37461	73645	SPN201158
13339	49523	BFU105067	25401	61585	LPN103596	37462	73646	SPN201210
13340	49524	BFU105069	25402	61586	LPN103600	37463	73647	SPN201737
13341	49525	BFU105081	25403	61587	LPN103608	37464	73648	SPN201794
13342	49526	BFU105096	25404	61588	LPN103612	37465	73649	SPN201925
13343	49527	BFU105165	25405	61589	LPN103614	37466	73650	SPN201930
13344	49528	BFU105204	25406	61590	LPN103620	37467	73651	SPN201991
13345	49529	BFU105208	25407	61591	LPN103622	37468	73652	SPN202499
13346	49530	BFU105217	25408	61592	LPN103633	37469	73653	SPN202849
13347	49531	BFU105225	25409	61593	LPN103638	37470	73654	SPN202910
13348	49532	BFU105240	25410	61594	LPN103648	37471	73655	SPN202986
13349	49533	BFU105257	25411	61595	LPN103657	37472	73656	SPN203024
13350	49534	BFU105259	25412	61596	LPN103658	37473	73657	SPN203453
13351	49535	BFU105262	25413	61597	LPN103660	37474	73658	SPN203740
13352	49536	BFU105280	25414	61598	MAV100005	37475	73659	SPN203747
13353	49537	BFU105302	25415	61599	MAV100054	37476	73660	SPN300070
13354	49538	BFU105306	25416	61600	MAV100073	37477	73661	SPN300327
13355	49539	BFU105309	25417	61601	MAV100075	37478	73662	SPN300328
13356	49540	BFU105313	25418	61602	MAV100077	37479	73663	SPN300330
13357	49541	BFU105347	25419	61603	MAV100094	37480	73664	SPN300331
13358	49542	BFU105355	25420	61604	MAV100149	37481	73665	SPN300337
13359	49543	BFU105460	25421	61605	MAV100155	37482	73666	SPN300338
13360	49544	BFU105494	25422	61606	MAV100179	37483	73667	SPN300340

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13361	49545	BFU105496	25423	61607	MAV100199	37484	73668	SPN300353
13362	49546	BFU105499	25424	61608	MAV100201	37485	73669	SPN300435
13363	49547	BFU105505	25425	61609	MAV100203	37486	73670	SPN300598
13364	49548	BFU105518	25426	61610	MAV100227	37487	73671	SPN300686
13365	49549	BFU105525	25427	61611	MAV100233	37488	73672	SPN300759
13366	49550	BFU105556	25428	61612	MAV100235	37489	73673	SPN300982
13367	49551	BFU105569	25429	61613	MAV100245	37490	73674	SPN301332
13368	49552	BFU105613	25430	61614	MAV100250	37491	73675	SPN301641
13369	49553	BFU105637	25431	61615	MAV100251	37492	73676	SPN301643
13370	49554	BFU105642	25432	61616	MAV100271	37493	73677	SPN301644
13371	49555	BFU105710	25433	61617	MAV100272	37494	73678	SPN301653
13372	49556	BFU105730	25434	61618	MAV100285	37495	73679	SPN301765
13373	49557	BFU105731	25435	61619	MAV100286	37496	73680	SPN302037
13374	49558	BFU105739	25436	61620	MAV100298	37497	73681	SPN400001
13375	49559	BFU105740	25437	61621	MAV100299	37498	73682	SPN400002
13376	49560	BFU105758	25438	61622	MAV100300	37499	73683	SPN400003
13377	49561	BFU105764	25439	61623	MAV100301	37500	73684	SPN400004
13378	49562	BFU105781	25440	61624	MAV100309	37501	73685	SPN400006
13379	49563	BFU105807	25441	61625	MAV100316	37502	73686	SPN400007
13380	49564	BFU105826	25442	61626	MAV100323	37503	73687	SPN400010
13381	49565	BFU105837	25443	61627	MAV100337	37504	73688	SPN400012
13382	49566	BFU105853	25444	61628	MAV100342	37505	73689	SPN400021
13383	49567	BFU105903	25445	61629	MAV100344	37506	73690	SPN400025
13384	49568	BFU105906	25446	61630	MAV100345	37507	73691	SPN400028
13385	49569	BFU105918	25447	61631	MAV100351	37508	73692	SPN400032
13386	49570	BFU105920	25448	61632	MAV100375	37509	73693	SPN400035
13387	49571	BFU105922	25449	61633	MAV100389	37510	73694	SPN400038
13388	49572	BFU105924	25450	61634	MAV100393	37511	73695	SPN400046
13389	49573	BFU105977	25451	61635	MAV100400	37512	73696	SPN400056
13390	49574	BFU106002	25452	61636	MAV100412	37513	73697	SPN400066
13391	49575	BFU106008	25453	61637	MAV100423	37514	73698	SPN400078
13392	49576	BFU106132	25454	61638	MAV100438	37515	73699	SPN400084
13393	49577	BFU106133	25455	61639	MAV100466	37516	73700	SPN400092
13394	49578	BFU106135	25456	61640	MAV100482	37517	73701	SPN400103
13395	49579	BFU106225	25457	61641	MAV100488	37518	73702	SPN400121
13396	49580	BFU106232	25458	61642	MAV100499	37519	73703	SPN400122
13397	49581	BFU106253	25459	61643	MAV100507	37520	73704	SPN400124
13398	49582	BFU106257	25460	61644	MAV100512	37521	73705	SPN400125
13399	49583	BFU106271	25461	61645	MAV100541	37522	73706	SPN400131
13400	49584	BFU106323	25462	61646	MAV100546	37523	73707	SPN400136
13401	49585	BFU106334	25463	61647	MAV100547	37524	73708	SPN400147
13402	49586	BFU106339	25464	61648	MAV100553	37525	73709	SPN400150
13403	49587	BFU106340	25465	61649	MAV100554	37526	73710	SPN400156
13404	49588	BFU106341	25466	61650	MAV100556	37527	73711	SPN400157
13405	49589	BFU106342	25467	61651	MAV100557	37528	73712	SPN400160
13406	49590	BFU106344	25468	61652	MAV100559	37529	73713	SPN400161
13407	49591	BFU106345	25469	61653	MAV100561	37530	73714	SPN400162
13408	49592	BFU106360	25470	61654	MAV100562	37531	73715	SPN400163
13409	49593	BFU106362	25471	61655	MAV100574	37532	73716	SPN400164
13410	49594	BFU106371	25472	61656	MAV100591	37533	73717	SPN400171
13411	49595	BFU106386	25473	61657	MAV100593	37534	73718	SPN400175
13412	49596	BFU106431	25474	61658	MAV100595	37535	73719	SPN400176
13413	49597	BFU106432	25475	61659	MAV100637	37536	73720	SPN400177
13414	49598	BFU106433	25476	61660	MAV100658	37537	73721	SPN400185
13415	49599	BFU106470	25477	61661	MAV100663	37538	73722	SPN400187

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13416	49600	BFU106477	25478	61662	MAV100667	37539	73723	SPN400188
13417	49601	BFU106480	25479	61663	MAV100685	37540	73724	SPN400189
13418	49602	BFU106483	25480	61664	MAV100728	37541	73725	SPN400190
13419	49603	BFU106485	25481	61665	MAV100734	37542	73726	SPN400191
13420	49604	BFU106488	25482	61666	MAV100736	37543	73727	SPN400192
13421	49605	BFU106495	25483	61667	MAV100739	37544	73728	SPN400194
13422	49606	BFU106497	25484	61668	MAV100743	37545	73729	SPN400195
13423	49607	BFU106498	25485	61669	MAV100747	37546	73730	SPN400196
13424	49608	BFU106533	25486	61670	MAV100750	37547	73731	SPN400197
13425	49609	BFU106544	25487	61671	MAV100755	37548	73732	SPN400198
13426	49610	BFU106568	25488	61672	MAV100756	37549	73733	SPN400199
13427	49611	BFU106609	25489	61673	MAV100776	37550	73734	SPN400200
13428	49612	BFU106700	25490	61674	MAV100777	37551	73735	SPN400201
13429	49613	BFU106774	25491	61675	MAV100786	37552	73736	SPN400202
13430	49614	BFU106797	25492	61676	MAV100794	37553	73737	SPN400203
13431	49615	BFU106833	25493	61677	MAV100804	37554	73738	SPN400204
13432	49616	BFU106841	25494	61678	MAV100805	37555	73739	SPN400205
13433	49617	BFU106847	25495	61679	MAV100810	37556	73740	SPN400206
13434	49618	BFU106856	25496	61680	MAV100811	37557	73741	SPN400207
13435	49619	BFU106862	25497	61681	MAV100813	37558	73742	SPN400208
13436	49620	BFU106864	25498	61682	MAV100814	37559	73743	SPN400209
13437	49621	BFU106872	25499	61683	MAV100819	37560	73744	SPN400210
13438	49622	BFU106887	25500	61684	MAV100820	37561	73745	SPN400211
13439	49623	BFU106892	25501	61685	MAV100821	37562	73746	SPN400212
13440	49624	BFU106893	25502	61686	MAV100826	37563	73747	SPN400213
13441	49625	BFU106894	25503	61687	MAV100828	37564	73748	SPN400214
13442	49626	BFU106928	25504	61688	MAV100851	37565	73749	SPN400215
13443	49627	BFU106944	25505	61689	MAV100904	37566	73750	SPN400216
13444	49628	BFU106978	25506	61690	MAV100910	37567	73751	SPN400219
13445	49629	BFU107002	25507	61691	MAV100914	37568	73752	SPN400228
13446	49630	BFU107007	25508	61692	MAV100919	37569	73753	SPN400232
13447	49631	BFU107038	25509	61693	MAV100921	37570	73754	SPN400233
13448	49632	BFU107045	25510	61694	MAV100931	37571	73755	SPN400235
13449	49633	BFU107049	25511	61695	MAV100968	37572	73756	SPN400237
13450	49634	BFU107062	25512	61696	MAV100979	37573	73757	SPN400240
13451	49635	BFU107090	25513	61697	MAV100988	37574	73758	SPN400241
13452	49636	BFU107135	25514	61698	MAV101006	37575	73759	SPN400243
13453	49637	BFU107151	25515	61699	MAV101008	37576	73760	SPN400244
13454	49638	BFU107173	25516	61700	MAV101010	37577	73761	SPN400245
13455	49639	BFU107253	25517	61701	MAV101012	37578	73762	SPN400248
13456	49640	BFU107308	25518	61702	MAV101014	37579	73763	SPN400249
13457	49641	BFU107313	25519	61703	MAV101015	37580	73764	SPN400250
13458	49642	BFU107317	25520	61704	MAV101032	37581	73765	SPN400251
13459	49643	BFU107323	25521	61705	MAV101053	37582	73766	SPN400255
13460	49644	BFU107325	25522	61706	MAV101054	37583	73767	SPN400256
13461	49645	BFU107327	25523	61707	MAV101064	37584	73768	SPN400261
13462	49646	BFU107336	25524	61708	MAV101088	37585	73769	SPN400262
13463	49647	BFU107381	25525	61709	MAV101105	37586	73770	SPN400263
13464	49648	BFU107405	25526	61710	MAV101116	37587	73771	SPN400266
13465	49649	BFU107408	25527	61711	MAV101169	37588	73772	SPN400269
13466	49650	BFU107418	25528	61712	MAV101174	37589	73773	SPN400271
13467	49651	BFU107523	25529	61713	MAV101179	37590	73774	SPN400272
13468	49652	BFU107593	25530	61714	MAV101180	37591	73775	SPN400276
13469	49653	BFU107623	25531	61715	MAV101181	37592	73776	SPN400287
13470	49654	BFU107633	25532	61716	MAV101182	37593	73777	SPN400290

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13471	49655	BFU107645	25533	61717	MAV101194	37594	73778	SPN400302
13472	49656	BFU107652	25534	61718	MAV101212	37595	73779	SPN400303
13473	49657	BFU107730	25535	61719	MAV101215	37596	73780	SPN400304
13474	49658	BFU107731	25536	61720	MAV101236	37597	73781	SPN400305
13475	49659	BFU107758	25537	61721	MAV101246	37598	73782	SPN400307
13476	49660	BFU107782	25538	61722	MAV101249	37599	73783	SPN400310
13477	49661	BFU107803	25539	61723	MAV101273	37600	73784	SPN400318
13478	49662	BFU107810	25540	61724	MAV101275	37601	73785	SPN400319
13479	49663	BFU107829	25541	61725	MAV101285	37602	73786	SPN400329
13480	49664	BFU107834	25542	61726	MAV101305	37603	73787	SPN400332
13481	49665	BFU107845	25543	61727	MAV101336	37604	73788	SPN400335
13482	49666	BFU107853	25544	61728	MAV101346	37605	73789	SPN400339
13483	49667	BFU107885	25545	61729	MAV101349	37606	73790	SPN400340
13484	49668	BFU107897	25546	61730	MAV101361	37607	73791	SPN400341
13485	49669	BFU107929	25547	61731	MAV101369	37608	73792	SPN400343
13486	49670	BFU107935	25548	61732	MAV101379	37609	73793	SPN400352
13487	49671	BFU107936	25549	61733	MAV101383	37610	73794	SPN400358
13488	49672	BFU107948	25550	61734	MAV101386	37611	73795	SPN400359
13489	49673	BFU107954	25551	61735	MAV101405	37612	73796	SPN400363
13490	49674	BFU107966	25552	61736	MAV101408	37613	73797	SPN400364
13491	49675	BFU107996	25553	61737	MAV101410	37614	73798	SPN400368
13492	49676	BFU107999	25554	61738	MAV101412	37615	73799	SPN400372
13493	49677	BFU108040	25555	61739	MAV101415	37616	73800	SPN400374
13494	49678	BFU108046	25556	61740	MAV101420	37617	73801	SPN400375
13495	49679	BFU108056	25557	61741	MAV101428	37618	73802	SPN400377
13496	49680	BFU108081	25558	61742	MAV101429	37619	73803	SPN400378
13497	49681	BFU108097	25559	61743	MAV101430	37620	73804	SPN400379
13498	49682	BFU108125	25560	61744	MAV101431	37621	73805	SPN400380
13499	49683	BFU108127	25561	61745	MAV101439	37622	73806	SPN400381
13500	49684	BFU108139	25562	61746	MAV101441	37623	73807	SPN400382
13501	49685	BFU108190	25563	61747	MAV101449	37624	73808	SPN400383
13502	49686	BFU108232	25564	61748	MAV101468	37625	73809	SPN400384
13503	49687	BFU108244	25565	61749	MAV101477	37626	73810	SPN400385
13504	49688	BFU108289	25566	61750	MAV101484	37627	73811	SPN400386
13505	49689	BFU108292	25567	61751	MAV101485	37628	73812	SPN400387
13506	49690	BFU108338	25568	61752	MAV101486	37629	73813	SPN400390
13507	49691	BFU108387	25569	61753	MAV101497	37630	73814	SPN400393
13508	49692	BFU108542	25570	61754	MAV101501	37631	73815	SPN400394
13509	49693	BFU108548	25571	61755	MAV101544	37632	73816	SPN400395
13510	49694	BFU108641	25572	61756	MAV101547	37633	73817	SPN400396
13511	49695	BFU108643	25573	61757	MAV101548	37634	73818	SPN400398
13512	49696	BFU108644	25574	61758	MAV101549	37635	73819	SPN400401
13513	49697	BFU108657	25575	61759	MAV101550	37636	73820	SPN400402
13514	49698	BFU108672	25576	61760	MAV101552	37637	73821	SPN400403
13515	49699	BFU108696	25577	61761	MAV101559	37638	73822	SPN400409
13516	49700	BFU108703	25578	61762	MAV101560	37639	73823	SPN400426
13517	49701	BFU108704	25579	61763	MAV101562	37640	73824	SPN400427
13518	49702	BFU108711	25580	61764	MAV101591	37641	73825	SPN400428
13519	49703	BFU108726	25581	61765	MAV101610	37642	73826	SPN400432
13520	49704	BFU108758	25582	61766	MAV101627	37643	73827	SPN400434
13521	49705	BFU108762	25583	61767	MAV101637	37644	73828	SPN400438
13522	49706	BFU108766	25584	61768	MAV101641	37645	73829	SPN400439
13523	49707	BFU108796	25585	61769	MAV101648	37646	73830	SPN400441
13524	49708	BFU108797	25586	61770	MAV101663	37647	73831	SPN400444
13525	49709	BFU108805	25587	61771	MAV101692	37648	73832	SPN400445

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13526	49710	BFU108808	25588	61772	MAV101693	37649	73833	SPN400446
13527	49711	BFU108906	25589	61773	MAV101708	37650	73834	SPN400448
13528	49712	BFU108912	25590	61774	MAV101730	37651	73835	SPN400455
13529	49713	BFU108924	25591	61775	MAV101732	37652	73836	SPN400475
13530	49714	BFU108950	25592	61776	MAV101737	37653	73837	SPN400478
13531	49715	BFU108951	25593	61777	MAV101739	37654	73838	SPN400481
13532	49716	BFU108967	25594	61778	MAV101742	37655	73839	SPN400492
13533	49717	BFU109099	25595	61779	MAV101753	37656	73840	SPN400494
13534	49718	BFU109113	25596	61780	MAV101757	37657	73841	SPN400495
13535	49719	BFU109134	25597	61781	MAV101764	37658	73842	SPN400496
13536	49720	BFU109166	25598	61782	MAV101768	37659	73843	SPN400505
13537	49721	BFU109172	25599	61783	MAV101769	37660	73844	SPN400507
13538	49722	BFU109218	25600	61784	MAV101780	37661	73845	SPN400508
13539	49723	BFU109219	25601	61785	MAV101782	37662	73846	SPN400509
13540	49724	BFU109224	25602	61786	MAV101794	37663	73847	SPN400515
13541	49725	BFU109252	25603	61787	MAV101812	37664	73848	SPN400516
13542	49726	BFU109256	25604	61788	MAV101815	37665	73849	SPN400517
13543	49727	BFU109266	25605	61789	MAV101838	37666	73850	SPN400519
13544	49728	BFU109270	25606	61790	MAV101842	37667	73851	SPN400521
13545	49729	BFU109289	25607	61791	MAV101844	37668	73852	SPN400530
13546	49730	BFU109291	25608	61792	MAV101851	37669	73853	SPN400537
13547	49731	BFU109309	25609	61793	MAV101852	37670	73854	SPN400538
13548	49732	BFU109335	25610	61794	MAV101853	37671	73855	SPN400540
13549	49733	BFU109350	25611	61795	MAV101872	37672	73856	SPN400547
13550	49734	BFU109391	25612	61796	MAV101886	37673	73857	SPN400552
13551	49735	BFU109396	25613	61797	MAV101894	37674	73858	SPN400555
13552	49736	BFU109408	25614	61798	MAV101907	37675	73859	SPN400556
13553	49737	BFU109424	25615	61799	MAV101929	37676	73860	SPN400573
13554	49738	BFU109426	25616	61800	MAV101952	37677	73861	SPN400581
13555	49739	BFU109440	25617	61801	MAV101957	37678	73862	SPN400585
13556	49740	BFU109459	25618	61802	MAV101962	37679	73863	SPN400595
13557	49741	BFU109580	25619	61803	MAV101963	37680	73864	SPN400598
13558	49742	BFU109581	25620	61804	MAV102006	37681	73865	SPN400603
13559	49743	BFU109591	25621	61805	MAV102015	37682	73866	SPN400604
13560	49744	BFU109627	25622	61806	MAV102017	37683	73867	SPN400605
13561	49745	BFU109648	25623	61807	MAV102019	37684	73868	SPN400608
13562	49746	BFU109681	25624	61808	MAV102021	37685	73869	SPN400614
13563	49747	BFU109684	25625	61809	MAV102035	37686	73870	SPN400626
13564	49748	BFU109685	25626	61810	MAV102046	37687	73871	SPN400627
13565	49749	BFU109691	25627	61811	MAV102050	37688	73872	SPN400629
13566	49750	BFU109692	25628	61812	MAV102052	37689	73873	SPN400630
13567	49751	BFU109703	25629	61813	MAV102060	37690	73874	SPN400634
13568	49752	BFU109734	25630	61814	MAV102065	37691	73875	SPN400641
13569	49753	BFU109736	25631	61815	MAV102067	37692	73876	SPN400642
13570	49754	BFU109787	25632	61816	MAV102069	37693	73877	SPN400647
13571	49755	BFU109796	25633	61817	MAV102070	37694	73878	SPN400649
13572	49756	BFU109800	25634	61818	MAV102071	37695	73879	SPN400651
13573	49757	BFU109807	25635	61819	MAV102072	37696	73880	SPN400655
13574	49758	BFU109811	25636	61820	MAV102073	37697	73881	SPN400661
13575	49759	BFU109876	25637	61821	MAV102075	37698	73882	SPN400665
13576	49760	BFU109953	25638	61822	MAV102077	37699	73883	SPN400670
13577	49761	BFU110006	25639	61823	MAV102079	37700	73884	SPN400671
13578	49762	BFU110023	25640	61824	MAV102080	37701	73885	SPN400675
13579	49763	BFU110052	25641	61825	MAV102081	37702	73886	SPN400676
13580	49764	BFU110089	25642	61826	MAV102083	37703	73887	SPN400682

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13581	49765	BFU110234	25643	61827	MAV102085	37704	73888	SPN400683
13582	49766	BFU110328	25644	61828	MAV102086	37705	73889	SPN400686
13583	49767	BFU110329	25645	61829	MAV102087	37706	73890	SPN400687
13584	49768	BFU110332	25646	61830	MAV102088	37707	73891	SPN400692
13585	49769	BFU110334	25647	61831	MAV102089	37708	73892	SPN400693
13586	49770	BFU110339	25648	61832	MAV102090	37709	73893	SPN400696
13587	49771	BFU110385	25649	61833	MAV102091	37710	73894	SPN400706
13588	49772	BFU110403	25650	61834	MAV102092	37711	73895	SPN400715
13589	49773	BFU110407	25651	61835	MAV102093	37712	73896	SPN400728
13590	49774	BFU110433	25652	61836	MAV102095	37713	73897	SPN400740
13591	49775	BFU110441	25653	61837	MAV102104	37714	73898	SPN400743
13592	49776	BFU110445	25654	61838	MAV102109	37715	73899	SPN400745
13593	49777	BFU110451	25655	61839	MAV102113	37716	73900	SPN400754
13594	49778	BFU110458	25656	61840	MAV102122	37717	73901	SPN400755
13595	49779	BFU110503	25657	61841	MAV102128	37718	73902	SPN400756
13596	49780	BFU110636	25658	61842	MAV102129	37719	73903	SPN400757
13597	49781	BFU110652	25659	61843	MAV102134	37720	73904	SPN400758
13598	49782	BFU110691	25660	61844	MAV102135	37721	73905	SPN400764
13599	49783	BFU110700	25661	61845	MAV102138	37722	73906	SPN400769
13600	49784	BFU110729	25662	61846	MAV102142	37723	73907	SPN400771
13601	49785	BFU110742	25663	61847	MAV102145	37724	73908	SPN400774
13602	49786	BFU110799	25664	61848	MAV102148	37725	73909	SPN400779
13603	49787	BFU110855	25665	61849	MAV102154	37726	73910	SPN400780
13604	49788	BFU110875	25666	61850	MAV102169	37727	73911	SPN400781
13605	49789	BFU110885	25667	61851	MAV102216	37728	73912	SPN400790
13606	49790	BFU110913	25668	61852	MAV102258	37729	73913	SPN400795
13607	49791	BFU110929	25669	61853	MAV102270	37730	73914	SPN400796
13608	49792	BFU110931	25670	61854	MAV102272	37731	73915	SPN400797
13609	49793	BFU110972	25671	61855	MAV102273	37732	73916	SPN400808
13610	49794	BFU110988	25672	61856	MAV102283	37733	73917	SPN400828
13611	49795	BFU110989	25673	61857	MAV102284	37734	73918	SPN400833
13612	49796	BFU111004	25674	61858	MAV102295	37735	73919	SPN400835
13613	49797	BFU111005	25675	61859	MAV102304	37736	73920	SPN400836
13614	49798	BFU111015	25676	61860	MAV102307	37737	73921	SPN400838
13615	49799	BFU111016	25677	61861	MAV102308	37738	73922	SPN400844
13616	49800	BFU111075	25678	61862	MAV102318	37739	73923	SPN400845
13617	49801	BFU111080	25679	61863	MAV102320	37740	73924	SPN400846
13618	49802	BFU111093	25680	61864	MAV102333	37741	73925	SPN400854
13619	49803	BFU111110	25681	61865	MAV102335	37742	73926	SPN400861
13620	49804	BFU111116	25682	61866	MAV102343	37743	73927	SPN400862
13621	49805	BFU111125	25683	61867	MAV102347	37744	73928	SPN400863
13622	49806	BFU111140	25684	61868	MAV102348	37745	73929	SPN400864
13623	49807	BFU111162	25685	61869	MAV102370	37746	73930	SPN400868
13624	49808	BFU111198	25686	61870	MAV102387	37747	73931	SPN400870
13625	49809	BFU111209	25687	61871	MAV102403	37748	73932	SPN400871
13626	49810	BFU111283	25688	61872	MAV102424	37749	73933	SPN400872
13627	49811	BFU111328	25689	61873	MAV102451	37750	73934	SPN400875
13628	49812	BFU111330	25690	61874	MAV102514	37751	73935	SPN400879
13629	49813	BFU111349	25691	61875	MAV102515	37752	73936	SPN400885
13630	49814	BFU111408	25692	61876	MAV102532	37753	73937	SPN400891
13631	49815	BFU111409	25693	61877	MAV102533	37754	73938	SPN400894
13632	49816	BFU111464	25694	61878	MAV102537	37755	73939	SPN400897
13633	49817	BFU111465	25695	61879	MAV102599	37756	73940	SPN400905
13634	49818	BFU111473	25696	61880	MAV102617	37757	73941	SPN400913
13635	49819	BFU111580	25697	61881	MAV102620	37758	73942	SPN400918

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13636	49820	BFU111584	25698	61882	MAV102627	37759	73943	SPN400920
13637	49821	BFU111646	25699	61883	MAV102680	37760	73944	SPN400922
13638	49822	BFU111670	25700	61884	MAV102690	37761	73945	SPN400924
13639	49823	BFU111678	25701	61885	MAV102693	37762	73946	SPN400925
13640	49824	BFU111683	25702	61886	MAV102705	37763	73947	SPN400928
13641	49825	BFU111711	25703	61887	MAV102717	37764	73948	SPN400935
13642	49826	BFU111719	25704	61888	MAV102722	37765	73949	SPN400938
13643	49827	BFU111724	25705	61889	MAV102723	37766	73950	SPN400943
13644	49828	BFU111756	25706	61890	MAV102725	37767	73951	SPN400947
13645	49829	BFU111760	25707	61891	MAV102729	37768	73952	SPN400948
13646	49830	BFU111761	25708	61892	MAV102732	37769	73953	SPN400966
13647	49831	BFU111768	25709	61893	MAV102743	37770	73954	SPN400973
13648	49832	BFU111824	25710	61894	MAV102744	37771	73955	SPN400978
13649	49833	BFU111851	25711	61895	MAV102745	37772	73956	SPN400979
13650	49834	BFU111857	25712	61896	MAV102747	37773	73957	SPN400982
13651	49835	BFU111886	25713	61897	MAV102768	37774	73958	SPN400984
13652	49836	BFU111916	25714	61898	MAV102772	37775	73959	SPN400989
13653	49837	BFU111994	25715	61899	MAV102775	37776	73960	SPN400995
13654	49838	BFU112017	25716	61900	MAV102776	37777	73961	SPN400996
13655	49839	BFU112047	25717	61901	MAV102797	37778	73962	SPN401004
13656	49840	BFU112051	25718	61902	MAV102809	37779	73963	SPN401005
13657	49841	BFU112086	25719	61903	MAV102810	37780	73964	SPN401006
13658	49842	BFU112174	25720	61904	MAV102823	37781	73965	SPN401007
13659	49843	BFU112189	25721	61905	MAV102826	37782	73966	SPN401010
13660	49844	BFU112278	25722	61906	MAV102832	37783	73967	SPN401012
13661	49845	BFU112290	25723	61907	MAV102852	37784	73968	SPN401013
13662	49846	BFU112337	25724	61908	MAV102855	37785	73969	SPN401014
13663	49847	BFU112376	25725	61909	MAV102866	37786	73970	SPN401017
13664	49848	BFU112434	25726	61910	MAV102882	37787	73971	SPN401020
13665	49849	BFU112442	25727	61911	MAV102886	37788	73972	SPN401021
13666	49850	BFU112499	25728	61912	MAV102887	37789	73973	SPN401024
13667	49851	BFU112516	25729	61913	MAV102888	37790	73974	SPN401028
13668	49852	BFU112530	25730	61914	MAV102894	37791	73975	SPN401036
13669	49853	BFU112557	25731	61915	MAV102898	37792	73976	SPN401039
13670	49854	BFU112565	25732	61916	MAV102901	37793	73977	SPN401040
13671	49855	BFU112629	25733	61917	MAV102913	37794	73978	SPN401042
13672	49856	BFU112633	25734	61918	MAV102918	37795	73979	SPN401043
13673	49857	BFU112636	25735	61919	MAV102930	37796	73980	SPN401044
13674	49858	BFU112683	25736	61920	MAV102932	37797	73981	SPN401045
13675	49859	BFU112706	25737	61921	MAV102933	37798	73982	SPN401046
13676	49860	BFU112738	25738	61922	MAV102937	37799	73983	SPN401048
13677	49861	BFU112783	25739	61923	MAV102938	37800	73984	SPN401049
13678	49862	BFU112796	25740	61924	MAV102941	37801	73985	SPN401050
13679	49863	BFU112825	25741	61925	MAV102942	37802	73986	SPN401051
13680	49864	BFU112826	25742	61926	MAV102943	37803	73987	SPN401053
13681	49865	BFU112884	25743	61927	MAV102944	37804	73988	SPN401062
13682	49866	BFU112885	25744	61928	MAV102951	37805	73989	SPN401063
13683	49867	BFU112906	25745	61929	MAV102952	37806	73990	SPN401065
13684	49868	BFU112943	25746	61930	MAV102959	37807	73991	SPN401066
13685	49869	BFU112947	25747	61931	MAV102966	37808	73992	SPN401068
13686	49870	BFU112966	25748	61932	MAV103003	37809	73993	SPN401069
13687	49871	BFU113002	25749	61933	MAV103013	37810	73994	SPN401070
13688	49872	BFU113008	25750	61934	MAV103023	37811	73995	SPN401072
13689	49873	BFU113111	25751	61935	MAV103024	37812	73996	SPN401074
13690	49874	BFU113139	25752	61936	MAV103029	37813	73997	SPN401075

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13691	49875	BFU113174	25753	61937	MAV103031	37814	73998	SPN401086
13692	49876	BFU113190	25754	61938	MAV103034	37815	73999	SPN401088
13693	49877	BFU113203	25755	61939	MAV103039	37816	74000	SPN401091
13694	49878	BFU113278	25756	61940	MAV103067	37817	74001	SPN401098
13695	49879	BFU113279	25757	61941	MAV103068	37818	74002	SPN401105
13696	49880	BFU113310	25758	61942	MAV103075	37819	74003	SPN401106
13697	49881	BFU113321	25759	61943	MAV103088	37820	74004	SPN401121
13698	49882	BFU113350	25760	61944	MAV103092	37821	74005	SPN401122
13699	49883	BFU113418	25761	61945	MAV103129	37822	74006	SPN401123
13700	49884	BFU113421	25762	61946	MAV103140	37823	74007	SPN401125
13701	49885	BFU113440	25763	61947	MAV103147	37824	74008	SPN401127
13702	49886	BFU113446	25764	61948	MAV103150	37825	74009	SPN401140
13703	49887	BFU113558	25765	61949	MAV103153	37826	74010	SPN401145
13704	49888	BFU113561	25766	61950	MAV103158	37827	74011	SPN401147
13705	49889	BFU113657	25767	61951	MAV103161	37828	74012	SPN401148
13706	49890	BFU113675	25768	61952	MAV103162	37829	74013	SPN401149
13707	49891	BFU113717	25769	61953	MAV103165	37830	74014	SPN401152
13708	49892	BFU113756	25770	61954	MAV103175	37831	74015	SPN401153
13709	49893	BFU113769	25771	61955	MAV103177	37832	74016	SPN401163
13710	49894	BFU113817	25772	61956	MAV103185	37833	74017	SPN401165
13711	49895	BFU113836	25773	61957	MAV103187	37834	74018	SPN401166
13712	49896	BFU113866	25774	61958	MAV103189	37835	74019	SPN401169
13713	49897	BFU113972	25775	61959	MAV103194	37836	74020	SPN401170
13714	49898	BFU113973	25776	61960	MAV103198	37837	74021	SPN401176
13715	49899	BFU113992	25777	61961	MAV103221	37838	74022	SPN401177
13716	49900	BFU113994	25778	61962	MAV103247	37839	74023	SPN401178
13717	49901	BFU114046	25779	61963	MAV103250	37840	74024	SPN401180
13718	49902	BFU114052	25780	61964	MAV103253	37841	74025	SPN401200
13719	49903	BFU114123	25781	61965	MAV103258	37842	74026	SPN401210
13720	49904	BFU114180	25782	61966	MAV103259	37843	74027	SPN401211
13721	49905	BFU114207	25783	61967	MAV103261	37844	74028	SPN401213
13722	49906	BFU114209	25784	61968	MAV103265	37845	74029	SPN401217
13723	49907	BFU114233	25785	61969	MAV103267	37846	74030	SPN401222
13724	49908	BFU114284	25786	61970	MAV103271	37847	74031	SPN401225
13725	49909	BFU114300	25787	61971	MAV103275	37848	74032	SPN401231
13726	49910	BFU114351	25788	61972	MAV103280	37849	74033	SPN401233
13727	49911	BFU114367	25789	61973	MAV103284	37850	74034	SPN401234
13728	49912	BFU114502	25790	61974	MAV103287	37851	74035	SPN401235
13729	49913	BFU114503	25791	61975	MAV103294	37852	74036	SPN401237
13730	49914	BFU114519	25792	61976	MAV103297	37853	74037	SPN401239
13731	49915	BFU114595	25793	61977	MAV103322	37854	74038	SPN401242
13732	49916	BFU114632	25794	61978	MAV103344	37855	74039	SPN401246
13733	49917	BFU114667	25795	61979	MAV103353	37856	74040	SPN401248
13734	49918	BFU114695	25796	61980	MAV103355	37857	74041	SPN401250
13735	49919	BFU114715	25797	61981	MAV103356	37858	74042	SPN401255
13736	49920	BFU114742	25798	61982	MAV103371	37859	74043	SPN401264
13737	49921	BFU114829	25799	61983	MAV103382	37860	74044	SPN401269
13738	49922	BFU114870	25800	61984	MAV103388	37861	74045	SPN401270
13739	49923	BFU114872	25801	61985	MAV103392	37862	74046	SPN401271
13740	49924	BFU114880	25802	61986	MAV103395	37863	74047	SPN401272
13741	49925	BFU114961	25803	61987	MAV103396	37864	74048	SPN401275
13742	49926	BFU114968	25804	61988	MAV103398	37865	74049	SPN401276
13743	49927	BFU114977	25805	61989	MAV103400	37866	74050	SPN401281
13744	49928	BFU115027	25806	61990	MAV103401	37867	74051	SPN401283
13745	49929	BFU115165	25807	61991	MAV103402	37868	74052	SPN401299

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13746	49930	BFU115196	25808	61992	MAV103415	37869	74053	SPN401301
13747	49931	BFU115276	25809	61993	MAV103416	37870	74054	SPN401305
13748	49932	BFU115281	25810	61994	MAV103417	37871	74055	SPN401316
13749	49933	BFU115309	25811	61995	MAV103429	37872	74056	SPN401317
13750	49934	BFU115323	25812	61996	MAV103439	37873	74057	SPN401319
13751	49935	BFU115336	25813	61997	MAV103447	37874	74058	SPN401320
13752	49936	BFU115450	25814	61998	MAV103466	37875	74059	SPN401321
13753	49937	BFU115490	25815	61999	MAV103471	37876	74060	SPN401327
13754	49938	BFU115574	25816	62000	MAV103503	37877	74061	SPN401328
13755	49939	BFU115576	25817	62001	MAV103512	37878	74062	SPN401331
13756	49940	BFU115595	25818	62002	MAV103522	37879	74063	SPN401334
13757	49941	BFU115601	25819	62003	MAV103524	37880	74064	SPN401338
13758	49942	BFU115607	25820	62004	MAV103533	37881	74065	SPN401342
13759	49943	BFU115652	25821	62005	MAV103538	37882	74066	SPN401350
13760	49944	BFU115698	25822	62006	MAV103539	37883	74067	SPN401352
13761	49945	BFU115699	25823	62007	MAV103545	37884	74068	SPN401361
13762	49946	BFU115706	25824	62008	MAV103566	37885	74069	SPN401362
13763	49947	BFU115722	25825	62009	MAV103568	37886	74070	SPN401363
13764	49948	BFU115748	25826	62010	MAV103576	37887	74071	SPN401364
13765	49949	BFU115799	25827	62011	MAV103580	37888	74072	SPN401365
13766	49950	BFU115826	25828	62012	MAV103592	37889	74073	SPN401372
13767	49951	BFU115854	25829	62013	MAV103597	37890	74074	SPN401376
13768	49952	BFU115907	25830	62014	MAV103599	37891	74075	SPN401382
13769	49953	BFU115965	25831	62015	MAV103601	37892	74076	SPN401383
13770	49954	BFU115968	25832	62016	MAV103606	37893	74077	SPN401384
13771	49955	BFU116174	25833	62017	MAV103610	37894	74078	SPN401388
13772	49956	BFU116206	25834	62018	MAV103621	37895	74079	SPN401393
13773	49957	BFU116306	25835	62019	MAV103625	37896	74080	SPN401394
13774	49958	BFU116313	25836	62020	MAV103629	37897	74081	SPN401395
13775	49959	BMA100015	25837	62021	MAV103638	37898	74082	SPN401396
13776	49960	BMA100022	25838	62022	MAV103640	37899	74083	SPN401402
13777	49961	BMA100031	25839	62023	MAV103641	37900	74084	SPN401409
13778	49962	BMA100034	25840	62024	MAV103648	37901	74085	SPN401411
13779	49963	BMA100053	25841	62025	MAV103649	37902	74086	SPN401412
13780	49964	BMA100055	25842	62026	MAV103656	37903	74087	SPN401413
13781	49965	BMA100059	25843	62027	MAV103659	37904	74088	SPN401416
13782	49966	BMA100060	25844	62028	MAV103673	37905	74089	SPN401417
13783	49967	BMA100069	25845	62029	MAV103677	37906	74090	SPN401420
13784	49968	BMA100071	25846	62030	MAV103710	37907	74091	SPN401421
13785	49969	BMA100072	25847	62031	MAV103718	37908	74092	SPN401422
13786	49970	BMA100077	25848	62032	MAV103737	37909	74093	SPN401423
13787	49971	BMA100078	25849	62033	MAV103755	37910	74094	SPN401426
13788	49972	BMA100086	25850	62034	MAV103759	37911	74095	SPN401428
13789	49973	BMA100120	25851	62035	MAV103767	37912	74096	SPN401429
13790	49974	BMA100121	25852	62036	MAV103780	37913	74097	SPN401439
13791	49975	BMA100134	25853	62037	MAV103783	37914	74098	SPN401442
13792	49976	BMA100152	25854	62038	MAV103787	37915	74099	SPN401443
13793	49977	BMA100166	25855	62039	MAV103801	37916	74100	SPN401445
13794	49978	BMA100169	25856	62040	MAV103805	37917	74101	SPN401450
13795	49979	BMA100174	25857	62041	MAV103808	37918	74102	SPN401452
13796	49980	BMA100176	25858	62042	MAV103813	37919	74103	SPN401455
13797	49981	BMA100184	25859	62043	MAV103815	37920	74104	SPN401457
13798	49982	BMA100194	25860	62044	MAV103822	37921	74105	SPN401464
13799	49983	BMA100200	25861	62045	MAV103827	37922	74106	SPN401466
13800	49984	BMA100207	25862	62046	MAV103835	37923	74107	SPN401471

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13801	49985	BMA100242	25863	62047	MAV103843	37924	74108	SPN401486
13802	49986	BMA100271	25864	62048	MAV103878	37925	74109	SPN401501
13803	49987	BMA100274	25865	62049	MAV103895	37926	74110	SPN401504
13804	49988	BMA100278	25866	62050	MAV103904	37927	74111	SPN401507
13805	49989	BMA100281	25867	62051	MAV103917	37928	74112	SPN401508
13806	49990	BMA100299	25868	62052	MAV103918	37929	74113	SPN401509
13807	49991	BMA100300	25869	62053	MAV103921	37930	74114	SPN401510
13808	49992	BMA100321	25870	62054	MAV103930	37931	74115	SPN401513
13809	49993	BMA100330	25871	62055	MAV103940	37932	74116	SPN401514
13810	49994	BMA100331	25872	62056	MAV103959	37933	74117	SPN401515
13811	49995	BMA100332	25873	62057	MAV103964	37934	74118	SPN401516
13812	49996	BMA100349	25874	62058	MAV103971	37935	74119	SPN401517
13813	49997	BMA100352	25875	62059	MAV103983	37936	74120	SPN401518
13814	49998	BMA100363	25876	62060	MAV103992	37937	74121	SPN401527
13815	49999	BMA100367	25877	62061	MAV103993	37938	74122	SPN401529
13816	50000	BMA100377	25878	62062	MAV103995	37939	74123	SPN401539
13817	50001	BMA100378	25879	62063	MAV103996	37940	74124	SPN401540
13818	50002	BMA100384	25880	62064	MAV103997	37941	74125	SPN401543
13819	50003	BMA100406	25881	62065	MAV104005	37942	74126	SPN401552
13820	50004	BMA100428	25882	62066	MAV104011	37943	74127	SPN401557
13821	50005	BMA100432	25883	62067	MAV104012	37944	74128	SPN401558
13822	50006	BMA100434	25884	62068	MAV104018	37945	74129	SPN401561
13823	50007	BMA100455	25885	62069	MAV104019	37946	74130	SPN401568
13824	50008	BMA100457	25886	62070	MAV104042	37947	74131	SPN401575
13825	50009	BMA100478	25887	62071	MAV104045	37948	74132	SPN401577
13826	50010	BMA100507	25888	62072	MAV104086	37949	74133	SPN401580
13827	50011	BMA100519	25889	62073	MAV104113	37950	74134	SPN401582
13828	50012	BMA100537	25890	62074	MAV104121	37951	74135	SPN401589
13829	50013	BMA100546	25891	62075	MAV104122	37952	74136	SPN401592
13830	50014	BMA100553	25892	62076	MAV104123	37953	74137	SPN401595
13831	50015	BMA100563	25893	62077	MAV104126	37954	74138	SPN401597
13832	50016	BMA100570	25894	62078	MAV104131	37955	74139	SPN401598
13833	50017	BMA100576	25895	62079	MAV104132	37956	74140	SPN401602
13834	50018	BMA100577	25896	62080	MAV104191	37957	74141	SPN401605
13835	50019	BMA100582	25897	62081	MAV104222	37958	74142	SPN401614
13836	50020	BMA100592	25898	62082	MAV104224	37959	74143	SPN401622
13837	50021	BMA100595	25899	62083	MAV104228	37960	74144	SPN401624
13838	50022	BMA100597	25900	62084	MAV104239	37961	74145	SPN401630
13839	50023	BMA100624	25901	62085	MAV104245	37962	74146	SPN401632
13840	50024	BMA100646	25902	62086	MAV104430	37963	74147	SPN401633
13841	50025	BMA100689	25903	62087	MAV104478	37964	74148	SPN401648
13842	50026	BMA100711	25904	62088	MAV104574	37965	74149	SPN401654
13843	50027	BMA100713	25905	62089	MAV104586	37966	74150	SPN401675
13844	50028	BMA100720	25906	62090	MAV104590	37967	74151	SPN401682
13845	50029	BMA100755	25907	62091	MAV104609	37968	74152	SPN401687
13846	50030	BMA100760	25908	62092	MAV104612	37969	74153	SPN401693
13847	50031	BMA100765	25909	62093	MAV104707	37970	74154	SPN401694
13848	50032	BMA100819	25910	62094	MAV104721	37971	74155	SPN401698
13849	50033	BMA100821	25911	62095	MAV104770	37972	74156	SPN401702
13850	50034	BMA100835	25912	62096	MAV104787	37973	74157	SPN401706
13851	50035	BMA100844	25913	62097	MAV104827	37974	74158	SPN401710
13852	50036	BMA100850	25914	62098	MAV104842	37975	74159	SPN401712
13853	50037	BMA100851	25915	62099	MAV104847	37976	74160	SPN401716
13854	50038	BMA100853	25916	62100	MAV104895	37977	74161	SPN401720
13855	50039	BMA100868	25917	62101	MAV104920	37978	74162	SPN401724

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13856	50040	BMA100869	25918	62102	MAV104921	37979	74163	SPN401736
13857	50041	BMA100911	25919	62103	MAV104946	37980	74164	SPN401755
13858	50042	BMA100917	25920	62104	MAV104984	37981	74165	SPN401756
13859	50043	BMA100943	25921	62105	MAV104987	37982	74166	SPN401757
13860	50044	BMA100948	25922	62106	MAV105025	37983	74167	SPN401766
13861	50045	BMA100957	25923	62107	MAV105031	37984	74168	SPN401774
13862	50046	BMA100998	25924	62108	MAV105050	37985	74169	SPN401775
13863	50047	BMA101020	25925	62109	MAV105065	37986	74170	SPN401776
13864	50048	BMA101024	25926	62110	MAV105067	37987	74171	SPN401779
13865	50049	BMA101028	25927	62111	MAV105101	37988	74172	SPN401780
13866	50050	BMA101045	25928	62112	MAV105125	37989	74173	SPN401786
13867	50051	BMA101052	25929	62113	MAV105135	37990	74174	SPN401788
13868	50052	BMA101057	25930	62114	MAV105169	37991	74175	SPN401792
13869	50053	BMA101065	25931	62115	MAV105180	37992	74176	SPN401793
13870	50054	BMA101083	25932	62116	MAV105204	37993	74177	SPN401797
13871	50055	BMA101111	25933	62117	MAV105209	37994	74178	SPN401802
13872	50056	BMA101112	25934	62118	MAV105267	37995	74179	SPN401803
13873	50057	BMA101121	25935	62119	MAV105287	37996	74180	SPN401804
13874	50058	BMA101128	25936	62120	MAV105291	37997	74181	SPN401805
13875	50059	BMA101152	25937	62121	MAV105306	37998	74182	SPN401808
13876	50060	BMA101165	25938	62122	MAV105337	37999	74183	SPN401812
13877	50061	BMA101166	25939	62123	MAV105362	38000	74184	SPN401813
13878	50062	BMA101178	25940	62124	MAV105384	38001	74185	SPN401818
13879	50063	BMA101183	25941	62125	MAV105413	38002	74186	SPN401823
13880	50064	BMA101185	25942	62126	MAV105419	38003	74187	SPN401835
13881	50065	BMA101206	25943	62127	MAV105422	38004	74188	SPN401837
13882	50066	BMA101214	25944	62128	MAV105445	38005	74189	SPN401839
13883	50067	BMA101219	25945	62129	MAV105446	38006	74190	SPN401842
13884	50068	BMA101246	25946	62130	MAV105448	38007	74191	SPN401850
13885	50069	BMA101250	25947	62131	MAV105497	38008	74192	SPN401851
13886	50070	BMA101276	25948	62132	MAV105499	38009	74193	SPN401853
13887	50071	BMA101290	25949	62133	MAV105503	38010	74194	SPN401863
13888	50072	BMA101322	25950	62134	MAV105506	38011	74195	SPN401864
13889	50073	BMA101335	25951	62135	MAV105510	38012	74196	SPN401865
13890	50074	BMA101338	25952	62136	MAV105518	38013	74197	SPN401866
13891	50075	BMA101355	25953	62137	MAV105530	38014	74198	SPN401875
13892	50076	BMA101385	25954	62138	MAV105552	38015	74199	SPN401878
13893	50077	BMA101403	25955	62139	MAV105559	38016	74200	SPN401879
13894	50078	BMA101414	25956	62140	MAV105572	38017	74201	SPN401885
13895	50079	BMA101428	25957	62141	MAV105579	38018	74202	SPN401887
13896	50080	BMA101458	25958	62142	MAV105583	38019	74203	SPN401895
13897	50081	BMA101481	25959	62143	MAV105594	38020	74204	SPN401899
13898	50082	BMA101484	25960	62144	MAV105603	38021	74205	SPN401900
13899	50083	BMA101485	25961	62145	MAV105607	38022	74206	SPN401902
13900	50084	BMA101495	25962	62146	MAV105640	38023	74207	SPN401904
13901	50085	BMA101496	25963	62147	MAV105645	38024	74208	SPN401907
13902	50086	BMA101499	25964	62148	MAV105676	38025	74209	SPN401915
13903	50087	BMA101500	25965	62149	MAV105704	38026	74210	SPN401919
13904	50088	BMA101518	25966	62150	MAV105730	38027	74211	SPN401921
13905	50089	BMA101520	25967	62151	MAV105759	38028	74212	SPN401928
13906	50090	BMA101533	25968	62152	MAV105805	38029	74213	SPN401932
13907	50091	BMA101577	25969	62153	MAV105815	38030	74214	SPN401935
13908	50092	BMA101585	25970	62154	MAV105850	38031	74215	SPN401937
13909	50093	BMA101593	25971	62155	MAV105869	38032	74216	SPN401941
13910	50094	BMA101603	25972	62156	MAV105900	38033	74217	SPN401954

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13911	50095	BMA101604	25973	62157	MAV105904	38034	74218	SPN401955
13912	50096	BMA101609	25974	62158	MAV105907	38035	74219	SPN401956
13913	50097	BMA101618	25975	62159	MAV105952	38036	74220	SPN401959
13914	50098	BMA101625	25976	62160	MAV105985	38037	74221	SPN401968
13915	50099	BMA101634	25977	62161	MAV106038	38038	74222	SPN401979
13916	50100	BMA101641	25978	62162	MAV106060	38039	74223	SPN401981
13917	50101	BMA101644	25979	62163	MAV106074	38040	74224	SPN401985
13918	50102	BMA101649	25980	62164	MAV106092	38041	74225	SPN401988
13919	50103	BMA101700	25981	62165	MAV106114	38042	74226	SPN401990
13920	50104	BMA101721	25982	62166	MAV106118	38043	74227	SPN401991
13921	50105	BMA101765	25983	62167	MAV106140	38044	74228	SPN401992
13922	50106	BMA101766	25984	62168	MAV106180	38045	74229	SPN401997
13923	50107	BMA101787	25985	62169	MAV106193	38046	74230	SPN402005
13924	50108	BMA101790	25986	62170	MAV106301	38047	74231	SPN402006
13925	50109	BMA101805	25987	62171	MAV106350	38048	74232	SPN402007
13926	50110	BMA101880	25988	62172	MAV106390	38049	74233	SPN402012
13927	50111	BMA101899	25989	62173	MAV106392	38050	74234	SPN402016
13928	50112	BMA101911	25990	62174	MAV106393	38051	74235	SPN402017
13929	50113	BMA101914	25991	62175	MAV106394	38052	74236	SPN402019
13930	50114	BMA101918	25992	62176	MAV106396	38053	74237	SPN402021
13931	50115	BMA101920	25993	62177	MAV106404	38054	74238	SPN402022
13932	50116	BMA101924	25994	62178	MAV106405	38055	74239	SPN402023
13933	50117	BMA101936	25995	62179	MAV106410	38056	74240	SPN402024
13934	50118	BMA101937	25996	62180	MAV106414	38057	74241	SPN402025
13935	50119	BMA101951	25997	62181	MAV106430	38058	74242	SPN402026
13936	50120	BMA101975	25998	62182	MAV106432	38059	74243	SPN402031
13937	50121	BMA101986	25999	62183	MAV106442	38060	74244	SPN402032
13938	50122	BMA101995	26000	62184	MAV106443	38061	74245	SPN402036
13939	50123	BMA101998	26001	62185	MAV106465	38062	74246	SPN402037
13940	50124	BMA102007	26002	62186	MAV106467	38063	74247	SPN402041
13941	50125	BMA102013	26003	62187	MAV106475	38064	74248	SPN402042
13942	50126	BMA102024	26004	62188	MAV106479	38065	74249	SPY100024
13943	50127	BMA102055	26005	62189	MAV106497	38066	74250	SPY100064
13944	50128	BMA102057	26006	62190	MAV106504	38067	74251	SPY100086
13945	50129	BMA102061	26007	62191	MAV106507	38068	74252	SPY100103
13946	50130	BMA102063	26008	62192	MAV106509	38069	74253	SPY100159
13947	50131	BMA102072	26009	62193	MAV106513	38070	74254	SPY100161
13948	50132	BMA102074	26010	62194	MAV106517	38071	74255	SPY100203
13949	50133	BMA102082	26011	62195	MAV106518	38072	74256	SPY100277
13950	50134	BMA102085	26012	62196	MAV106519	38073	74257	SPY100322
13951	50135	BMA102102	26013	62197	MAV106520	38074	74258	SPY100349
13952	50136	BMA102106	26014	62198	MAV106522	38075	74259	SPY100446
13953	50137	BMA102153	26015	62199	MAV106525	38076	74260	SPY100688
13954	50138	BMA102164	26016	62200	MAV106529	38077	74261	SPY100767
13955	50139	BMA102165	26017	62201	MAV106530	38078	74262	SPY100910
13956	50140	BMA102172	26018	62202	MAV106531	38079	74263	SPY100934
13957	50141	BMA102173	26019	62203	MAV106532	38080	74264	SPY100941
13958	50142	BMA102197	26020	62204	MAV106540	38081	74265	SPY100972
13959	50143	BMA102202	26021	62205	MAV106542	38082	74266	SPY100981
13960	50144	BMA102208	26022	62206	MAV106545	38083	74267	SPY101115
13961	50145	BMA102225	26023	62207	MAV106547	38084	74268	SPY101254
13962	50146	BMA102236	26024	62208	MAV106548	38085	74269	SPY101451
13963	50147	BMA102261	26025	62209	MAV106549	38086	74270	SPY101502
13964	50148	BMA102272	26026	62210	MAV106572	38087	74271	SPY101613
13965	50149	BMA102306	26027	62211	MAV106573	38088	74272	SPY101669

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
13966	50150	BMA102315	26028	62212	MAV106576	38089	74273	SPY101819
13967	50151	BMA102321	26029	62213	MAV106579	38090	74274	SPY101855
13968	50152	BMA102344	26030	62214	MAV106588	38091	74275	SPY101903
13969	50153	BMA102365	26031	62215	MAV106589	38092	74276	SPY101914
13970	50154	BMA102366	26032	62216	MAV106603	38093	74277	SPY101929
13971	50155	BMA102378	26033	62217	MAV106636	38094	74278	SPY101944
13972	50156	BMA102384	26034	62218	MAV106640	38095	74279	SPY101945
13973	50157	BMA102386	26035	62219	MAV106642	38096	74280	SPY101946
13974	50158	BMA102395	26036	62220	MAV106643	38097	74281	SPY101987
13975	50159	BMA102452	26037	62221	MAV106664	38098	74282	SPY102082
13976	50160	BMA102467	26038	62222	MAV106724	38099	74283	SPY102094
13977	50161	BMA102489	26039	62223	MAV106780	38100	74284	SPY102341
13978	50162	BMA102491	26040	62224	MAV106814	38101	74285	SPY102377
13979	50163	BMA102492	26041	62225	MAV106921	38102	74286	SPY102409
13980	50164	BMA102494	26042	62226	MAV106939	38103	74287	SPY102499
13981	50165	BMA102496	26043	62227	MAV107016	38104	74288	SPY102630
13982	50166	BMA102515	26044	62228	MAV107021	38105	74289	SPY102942
13983	50167	BMA102521	26045	62229	MAV107152	38106	74290	SPY102945
13984	50168	BMA102527	26046	62230	MAV107193	38107	74291	SPY103087
13985	50169	BMA102538	26047	62231	MAV107220	38108	74292	SPY103176
13986	50170	BMA102547	26048	62232	MAV107238	38109	74293	SPY103251
13987	50171	BMA102557	26049	62233	MAV107258	38110	74294	SPY103286
13988	50172	BMA102559	26050	62234	MAV107307	38111	74295	SPY103363
13989	50173	BMA102568	26051	62235	MAV107352	38112	74296	SPY103387
13990	50174	BMA102573	26052	62236	MAV107390	38113	74297	SPY103617
13991	50175	BMA102577	26053	62237	MAV107400	38114	74298	SPY103619
13992	50176	BMA102592	26054	62238	MAV107513	38115	74299	SPY103747
13993	50177	BMA102600	26055	62239	MAV107627	38116	74300	SPY200001
13994	50178	BMA102603	26056	62240	MAV107704	38117	74301	SPY200002
13995	50179	BMA102624	26057	62241	MAV107742	38118	74302	SPY200003
13996	50180	BMA102629	26058	62242	MAV107800	38119	74303	SPY200004
13997	50181	BMA102637	26059	62243	MAV107884	38120	74304	SPY200006
13998	50182	BMA102656	26060	62244	MAV108037	38121	74305	SPY200007
13999	50183	BMA102663	26061	62245	MAV108053	38122	74306	SPY200010
14000	50184	BMA102664	26062	62246	MAV108057	38123	74307	SPY200011
14001	50185	BMA102682	26063	62247	MAV108159	38124	74308	SPY200012
14002	50186	BMA102686	26064	62248	MAV108170	38125	74309	SPY200014
14003	50187	BMA102698	26065	62249	MAV108179	38126	74310	SPY200019
14004	50188	BMA102714	26066	62250	MAV108258	38127	74311	SPY200028
14005	50189	BMA102722	26067	62251	MAV108289	38128	74312	SPY200033
14006	50190	BMA102737	26068	62252	MAV108334	38129	74313	SPY200034
14007	50191	BMA102755	26069	62253	MAV108341	38130	74314	SPY200036
14008	50192	BMA102767	26070	62254	MAV108353	38131	74315	SPY200037
14009	50193	BMA102774	26071	62255	MAV108372	38132	74316	SPY200038
14010	50194	BMA102817	26072	62256	MAV108422	38133	74317	SPY200039
14011	50195	BMA102821	26073	62257	MAV108484	38134	74318	SPY200040
14012	50196	BMA102838	26074	62258	MAV108493	38135	74319	SPY200041
14013	50197	BMA102844	26075	62259	MAV108571	38136	74320	SPY200042
14014	50198	BMA102879	26076	62260	MAV108578	38137	74321	SPY200043
14015	50199	BMA102889	26077	62261	MAV108579	38138	74322	SPY200044
14016	50200	BMA102938	26078	62262	MAV108594	38139	74323	SPY200045
14017	50201	BMA102942	26079	62263	MAV108685	38140	74324	SPY200046
14018	50202	BMA102951	26080	62264	MAV108739	38141	74325	SPY200047
14019	50203	BMA102974	26081	62265	MAV108772	38142	74326	SPY200048
14020	50204	BMA102975	26082	62266	MAV108777	38143	74327	SPY200049

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14021	50205	BMA102976	26083	62267	MAV108778	38144	74328	SPY200050
14022	50206	BMA102987	26084	62268	MAV108796	38145	74329	SPY200051
14023	50207	BMA103011	26085	62269	MAV108800	38146	74330	SPY200052
14024	50208	BMA103015	26086	62270	MAV109056	38147	74331	SPY200053
14025	50209	BMA103043	26087	62271	MBV100019	38148	74332	SPY200054
14026	50210	BMA103047	26088	62272	MBV100021	38149	74333	SPY200055
14027	50211	BMA103057	26089	62273	MBV100023	38150	74334	SPY200056
14028	50212	BMA103063	26090	62274	MBV100044	38151	74335	SPY200057
14029	50213	BMA103068	26091	62275	MBV100056	38152	74336	SPY200058
14030	50214	BMA103069	26092	62276	MBV100063	38153	74337	SPY200059
14031	50215	BMA103072	26093	62277	MBV100072	38154	74338	SPY200060
14032	50216	BMA103073	26094	62278	MBV100073	38155	74339	SPY200061
14033	50217	BMA103090	26095	62279	MBV100078	38156	74340	SPY200062
14034	50218	BMA103136	26096	62280	MBV100093	38157	74341	SPY200063
14035	50219	BMA103147	26097	62281	MBV100099	38158	74342	SPY200069
14036	50220	BMA103155	26098	62282	MBV100100	38159	74343	SPY200071
14037	50221	BMA103156	26099	62283	MBV100101	38160	74344	SPY200072
14038	50222	BMA103170	26100	62284	MBV100112	38161	74345	SPY200081
14039	50223	BMA103231	26101	62285	MBV100156	38162	74346	SPY200089
14040	50224	BMA103254	26102	62286	MBV100178	38163	74347	SPY200090
14041	50225	BMA103256	26103	62287	MBV100183	38164	74348	SPY200094
14042	50226	BMA103262	26104	62288	MBV100192	38165	74349	SPY200100
14043	50227	BMA103265	26105	62289	MBV100194	38166	74350	SPY200101
14044	50228	BMA103267	26106	62290	MBV100203	38167	74351	SPY200117
14045	50229	BMA103273	26107	62291	MBV100204	38168	74352	SPY200119
14046	50230	BMA103282	26108	62292	MBV100206	38169	74353	SPY200128
14047	50231	BMA103289	26109	62293	MBV100208	38170	74354	SPY200134
14048	50232	BMA103301	26110	62294	MBV100214	38171	74355	SPY200140
14049	50233	BMA103307	26111	62295	MBV100232	38172	74356	SPY200150
14050	50234	BMA103315	26112	62296	MBV100237	38173	74357	SPY200151
14051	50235	BMA103339	26113	62297	MBV100238	38174	74358	SPY200153
14052	50236	BMA103347	26114	62298	MBV100246	38175	74359	SPY200154
14053	50237	BMA103350	26115	62299	MBV100248	38176	74360	SPY200159
14054	50238	BMA103367	26116	62300	MBV100249	38177	74361	SPY200163
14055	50239	BMA103371	26117	62301	MBV100250	38178	74362	SPY200164
14056	50240	BMA103404	26118	62302	MBV100257	38179	74363	SPY200167
14057	50241	BMA103413	26119	62303	MBV100278	38180	74364	SPY200171
14058	50242	BMA103430	26120	62304	MBV100289	38181	74365	SPY200174
14059	50243	BMA103433	26121	62305	MBV100298	38182	74366	SPY200178
14060	50244	BMA103440	26122	62306	MBV100308	38183	74367	SPY200179
14061	50245	BMA103461	26123	62307	MBV100325	38184	74368	SPY200181
14062	50246	BMA103470	26124	62308	MBV100327	38185	74369	SPY200188
14063	50247	BMA103495	26125	62309	MBV100329	38186	74370	SPY200189
14064	50248	BMA103540	26126	62310	MBV100332	38187	74371	SPY200190
14065	50249	BMA103545	26127	62311	MBV100369	38188	74372	SPY200191
14066	50250	BMA103554	26128	62312	MBV100379	38189	74373	SPY200192
14067	50251	BMA103568	26129	62313	MBV100382	38190	74374	SPY200197
14068	50252	BMA103588	26130	62314	MBV100383	38191	74375	SPY200199
14069	50253	BMA103598	26131	62315	MBV100384	38192	74376	SPY200200
14070	50254	BMA103602	26132	62316	MBV100407	38193	74377	SPY200201
14071	50255	BMA103603	26133	62317	MBV100409	38194	74378	SPY200202
14072	50256	BMA103613	26134	62318	MBV100418	38195	74379	SPY200203
14073	50257	BMA103619	26135	62319	MBV100426	38196	74380	SPY200205
14074	50258	BMA103625	26136	62320	MBV100432	38197	74381	SPY200209
14075	50259	BMA103652	26137	62321	MBV100454	38198	74382	SPY200210

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14076	50260	BMA103660	26138	62322	MBV100477	38199	74383	SPY200213
14077	50261	BMA103662	26139	62323	MBV100481	38200	74384	SPY200218
14078	50262	BMA103667	26140	62324	MBV100492	38201	74385	SPY200219
14079	50263	BMA103699	26141	62325	MBV100494	38202	74386	SPY200223
14080	50264	BMA103704	26142	62326	MBV100502	38203	74387	SPY200226
14081	50265	BMA103709	26143	62327	MBV100521	38204	74388	SPY200231
14082	50266	BMA103712	26144	62328	MBV100523	38205	74389	SPY200233
14083	50267	BMA103717	26145	62329	MBV100524	38206	74390	SPY200235
14084	50268	BMA103723	26146	62330	MBV100525	38207	74391	SPY200236
14085	50269	BMA103736	26147	62331	MBV100527	38208	74392	SPY200238
14086	50270	BMA103749	26148	62332	MBV100529	38209	74393	SPY200240
14087	50271	BMA103750	26149	62333	MBV100531	38210	74394	SPY200248
14088	50272	BMA103771	26150	62334	MBV100533	38211	74395	SPY200251
14089	50273	BMA103777	26151	62335	MBV100535	38212	74396	SPY200255
14090	50274	BMA103798	26152	62336	MBV100536	38213	74397	SPY200257
14091	50275	BMA103808	26153	62337	MBV100540	38214	74398	SPY200261
14092	50276	BMA103809	26154	62338	MBV100570	38215	74399	SPY200262
14093	50277	BMA103820	26155	62339	MBV100571	38216	74400	SPY200268
14094	50278	BMA103821	26156	62340	MBV100573	38217	74401	SPY200270
14095	50279	BMA103833	26157	62341	MBV100578	38218	74402	SPY200272
14096	50280	BMA103855	26158	62342	MBV100580	38219	74403	SPY200275
14097	50281	BMA103867	26159	62343	MBV100591	38220	74404	SPY200277
14098	50282	BMA103871	26160	62344	MBV100592	38221	74405	SPY200281
14099	50283	BMA103873	26161	62345	MBV100593	38222	74406	SPY200282
14100	50284	BMA103887	26162	62346	MBV100595	38223	74407	SPY200283
14101	50285	BMA103894	26163	62347	MBV100599	38224	74408	SPY200284
14102	50286	BMA103928	26164	62348	MBV100603	38225	74409	SPY200285
14103	50287	BMA103931	26165	62349	MBV100614	38226	74410	SPY200289
14104	50288	BMA103946	26166	62350	MBV100621	38227	74411	SPY200290
14105	50289	BMA103953	26167	62351	MBV100622	38228	74412	SPY200293
14106	50290	BMA103960	26168	62352	MBV100623	38229	74413	SPY200298
14107	50291	BMA103965	26169	62353	MBV100624	38230	74414	SPY200299
14108	50292	BMA103982	26170	62354	MBV100633	38231	74415	SPY200301
14109	50293	BMA103994	26171	62355	MBV100652	38232	74416	SPY200303
14110	50294	BMA104026	26172	62356	MBV100653	38233	74417	SPY200304
14111	50295	BMA104037	26173	62357	MBV100667	38234	74418	SPY200315
14112	50296	BMA104055	26174	62358	MBV100688	38235	74419	SPY200317
14113	50297	BMA104058	26175	62359	MBV100692	38236	74420	SPY200320
14114	50298	BMA104059	26176	62360	MBV100699	38237	74421	SPY200327
14115	50299	BMA104068	26177	62361	MBV100745	38238	74422	SPY200329
14116	50300	BMA104071	26178	62362	MBV100772	38239	74423	SPY200330
14117	50301	BMA104087	26179	62363	MBV100785	38240	74424	SPY200331
14118	50302	BMA104091	26180	62364	MBV100793	38241	74425	SPY200332
14119	50303	BMA104109	26181	62365	MBV100817	38242	74426	SPY200337
14120	50304	BMA104123	26182	62366	MBV100825	38243	74427	SPY200341
14121	50305	BMA104126	26183	62367	MBV100832	38244	74428	SPY200342
14122	50306	BMA104130	26184	62368	MBV100840	38245	74429	SPY200353
14123	50307	BMA104136	26185	62369	MBV100846	38246	74430	SPY200356
14124	50308	BMA104139	26186	62370	MBV100850	38247	74431	SPY200359
14125	50309	BMA104162	26187	62371	MBV100852	38248	74432	SPY200370
14126	50310	BMA104163	26188	62372	MBV100875	38249	74433	SPY200371
14127	50311	BMA104183	26189	62373	MBV100882	38250	74434	SPY200378
14128	50312	BMA104191	26190	62374	MBV100885	38251	74435	SPY200379
14129	50313	BMA104207	26191	62375	MBV100889	38252	74436	SPY200382
14130	50314	BMA104232	26192	62376	MBV100906	38253	74437	SPY200407

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14131	50315	BMA104267	26193	62377	MBV100910	38254	74438	SPY200409
14132	50316	BMA104295	26194	62378	MBV100917	38255	74439	SPY200412
14133	50317	BMA104306	26195	62379	MBV100918	38256	74440	SPY200413
14134	50318	BMA104317	26196	62380	MBV100919	38257	74441	SPY200418
14135	50319	BMA104332	26197	62381	MBV100927	38258	74442	SPY200421
14136	50320	BMA104335	26198	62382	MBV100928	38259	74443	SPY200427
14137	50321	BMA104337	26199	62383	MBV100931	38260	74444	SPY200429
14138	50322	BMA104338	26200	62384	MBV100934	38261	74445	SPY200440
14139	50323	BMA104351	26201	62385	MBV100941	38262	74446	SPY200441
14140	50324	BMA104367	26202	62386	MBV100967	38263	74447	SPY200443
14141	50325	BMA104373	26203	62387	MBV100969	38264	74448	SPY200444
14142	50326	BMA104399	26204	62388	MBV100973	38265	74449	SPY200445
14143	50327	BMA104409	26205	62389	MBV100975	38266	74450	SPY200449
14144	50328	BMA104447	26206	62390	MBV100989	38267	74451	SPY200457
14145	50329	BMA104486	26207	62391	MBV100990	38268	74452	SPY200463
14146	50330	BMA104499	26208	62392	MBV100992	38269	74453	SPY200468
14147	50331	BMA104500	26209	62393	MBV101010	38270	74454	SPY200469
14148	50332	BMA104510	26210	62394	MBV101011	38271	74455	SPY200470
14149	50333	BMA104513	26211	62395	MBV101012	38272	74456	SPY200471
14150	50334	BMA104515	26212	62396	MBV101013	38273	74457	SPY200472
14151	50335	BMA104533	26213	62397	MBV101014	38274	74458	SPY200509
14152	50336	BMA104539	26214	62398	MBV101015	38275	74459	SPY200525
14153	50337	BMA104551	26215	62399	MBV101016	38276	74460	SPY200530
14154	50338	BMA104571	26216	62400	MBV101017	38277	74461	SPY200532
14155	50339	BMA104589	26217	62401	MBV101018	38278	74462	SPY200535
14156	50340	BMA104593	26218	62402	MBV101045	38279	74463	SPY200538
14157	50341	BMA104598	26219	62403	MBV101047	38280	74464	SPY200545
14158	50342	BMA104606	26220	62404	MBV101048	38281	74465	SPY200550
14159	50343	BMA104609	26221	62405	MBV101054	38282	74466	SPY200551
14160	50344	BMA104615	26222	62406	MBV101055	38283	74467	SPY200553
14161	50345	BMA104623	26223	62407	MBV101058	38284	74468	SPY200554
14162	50346	BMA104624	26224	62408	MBV101071	38285	74469	SPY200555
14163	50347	BMA104638	26225	62409	MBV101083	38286	74470	SPY200556
14164	50348	BMA104651	26226	62410	MBV101106	38287	74471	SPY200561
14165	50349	BMA104672	26227	62411	MBV101126	38288	74472	SPY200564
14166	50350	BMA104676	26228	62412	MBV101130	38289	74473	SPY200565
14167	50351	BMA104683	26229	62413	MBV101134	38290	74474	SPY200567
14168	50352	BMA104685	26230	62414	MBV101140	38291	74475	SPY200571
14169	50353	BMA104709	26231	62415	MBV101152	38292	74476	SPY200572
14170	50354	BMA104738	26232	62416	MBV101153	38293	74477	SPY200574
14171	50355	BMA104764	26233	62417	MBV101154	38294	74478	SPY200576
14172	50356	BMA104769	26234	62418	MBV101159	38295	74479	SPY200577
14173	50357	BMA104773	26235	62419	MBV101161	38296	74480	SPY200581
14174	50358	BMA104789	26236	62420	MBV101167	38297	74481	SPY200583
14175	50359	BMA104805	26237	62421	MBV101169	38298	74482	SPY200584
14176	50360	BMA104809	26238	62422	MBV101174	38299	74483	SPY200591
14177	50361	BMA104829	26239	62423	MBV101177	38300	74484	SPY200593
14178	50362	BMA104846	26240	62424	MBV101184	38301	74485	SPY200595
14179	50363	BMA104857	26241	62425	MBV101185	38302	74486	SPY200596
14180	50364	BMA104868	26242	62426	MBV101203	38303	74487	SPY200597
14181	50365	BMA104881	26243	62427	MBV101231	38304	74488	SPY200598
14182	50366	BMA104886	26244	62428	MBV101237	38305	74489	SPY200599
14183	50367	BMA104937	26245	62429	MBV101239	38306	74490	SPY200600
14184	50368	BMA104956	26246	62430	MBV101240	38307	74491	SPY200601
14185	50369	BMA104958	26247	62431	MBV101241	38308	74492	SPY200602

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14186	50370	BMA104959	26248	62432	MBV101244	38309	74493	SPY200604
14187	50371	BMA104976	26249	62433	MBV101245	38310	74494	SPY200610
14188	50372	BMA104977	26250	62434	MBV101247	38311	74495	SPY200611
14189	50373	BMA104981	26251	62435	MBV101254	38312	74496	SPY200612
14190	50374	BMA104982	26252	62436	MBV101262	38313	74497	SPY200619
14191	50375	BMA104983	26253	62437	MBV101271	38314	74498	SPY200620
14192	50376	BMA104986	26254	62438	MBV101273	38315	74499	SPY200625
14193	50377	BMA105016	26255	62439	MBV101274	38316	74500	SPY200626
14194	50378	BMA105025	26256	62440	MBV101278	38317	74501	SPY200631
14195	50379	BMA105033	26257	62441	MBV101279	38318	74502	SPY200632
14196	50380	BMA105038	26258	62442	MBV101291	38319	74503	SPY200633
14197	50381	BMA105040	26259	62443	MBV101299	38320	74504	SPY200637
14198	50382	BMA105063	26260	62444	MBV101310	38321	74505	SPY200638
14199	50383	BMA105070	26261	62445	MBV101313	38322	74506	SPY200644
14200	50384	BMA105073	26262	62446	MBV101315	38323	74507	SPY200645
14201	50385	BMA105078	26263	62447	MBV101316	38324	74508	SPY200647
14202	50386	BMA105116	26264	62448	MBV101317	38325	74509	SPY200652
14203	50387	BMA105131	26265	62449	MBV101327	38326	74510	SPY200653
14204	50388	BMA105147	26266	62450	MBV101328	38327	74511	SPY200654
14205	50389	BMA105152	26267	62451	MBV101339	38328	74512	SPY200655
14206	50390	BMA105160	26268	62452	MBV101353	38329	74513	SPY200657
14207	50391	BMA105198	26269	62453	MBV101363	38330	74514	SPY200658
14208	50392	BMA105211	26270	62454	MBV101368	38331	74515	SPY200660
14209	50393	BMA105219	26271	62455	MBV101369	38332	74516	SPY200663
14210	50394	BMA105222	26272	62456	MBV101380	38333	74517	SPY200673
14211	50395	BMA105225	26273	62457	MBV101390	38334	74518	SPY200678
14212	50396	BMA105226	26274	62458	MBV101398	38335	74519	SPY200679
14213	50397	BMA105236	26275	62459	MBV101411	38336	74520	SPY200680
14214	50398	BMA105246	26276	62460	MBV101416	38337	74521	SPY200681
14215	50399	BMA105262	26277	62461	MBV101431	38338	74522	SPY200682
14216	50400	BMA105276	26278	62462	MBV101440	38339	74523	SPY200684
14217	50401	BMA105285	26279	62463	MBV101452	38340	74524	SPY200686
14218	50402	BMA105286	26280	62464	MBV101453	38341	74525	SPY200689
14219	50403	BMA105289	26281	62465	MBV101462	38342	74526	SPY200696
14220	50404	BMA105302	26282	62466	MBV101465	38343	74527	SPY200723
14221	50405	BMA105321	26283	62467	MBV101482	38344	74528	SPY200749
14222	50406	BMA105326	26284	62468	MBV101484	38345	74529	SPY200759
14223	50407	BMA105364	26285	62469	MBV101485	38346	74530	SPY200766
14224	50408	BMA105366	26286	62470	MBV101495	38347	74531	SPY200769
14225	50409	BMA105369	26287	62471	MBV101502	38348	74532	SPY200771
14226	50410	BMA105381	26288	62472	MBV101505	38349	74533	SPY200774
14227	50411	BMA105405	26289	62473	MBV101523	38350	74534	SPY200775
14228	50412	BMA105406	26290	62474	MBV101525	38351	74535	SPY200776
14229	50413	BMA105419	26291	62475	MBV101526	38352	74536	SPY200777
14230	50414	BMA105422	26292	62476	MBV101527	38353	74537	SPY200778
14231	50415	BMA105447	26293	62477	MBV101530	38354	74538	SPY200781
14232	50416	BMA105472	26294	62478	MBV101535	38355	74539	SPY200782
14233	50417	BMA105475	26295	62479	MBV101537	38356	74540	SPY200784
14234	50418	BMA105484	26296	62480	MBV101549	38357	74541	SPY200785
14235	50419	BMA105498	26297	62481	MBV101554	38358	74542	SPY200807
14236	50420	BMA105524	26298	62482	MBV101555	38359	74543	SPY200809
14237	50421	BMA105530	26299	62483	MBV101558	38360	74544	SPY200812
14238	50422	BMA105539	26300	62484	MBV101586	38361	74545	SPY200813
14239	50423	BMA105613	26301	62485	MBV101598	38362	74546	SPY200814
14240	50424	BMA105621	26302	62486	MBV101604	38363	74547	SPY200815

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14241	50425	BMA105680	26303	62487	MBV101605	38364	74548	SPY200825
14242	50426	BMA105687	26304	62488	MBV101607	38365	74549	SPY200831
14243	50427	BMA105697	26305	62489	MBV101609	38366	74550	SPY200833
14244	50428	BMA105698	26306	62490	MBV101627	38367	74551	SPY200834
14245	50429	BMA105726	26307	62491	MBV101628	38368	74552	SPY200838
14246	50430	BMA105727	26308	62492	MBV101633	38369	74553	SPY200840
14247	50431	BMA105732	26309	62493	MBV101638	38370	74554	SPY200845
14248	50432	BMA105735	26310	62494	MBV101639	38371	74555	SPY200848
14249	50433	BMA105750	26311	62495	MBV101640	38372	74556	SPY200855
14250	50434	BMA105767	26312	62496	MBV101641	38373	74557	SPY200856
14251	50435	BMA105777	26313	62497	MBV101642	38374	74558	SPY200857
14252	50436	BMA105812	26314	62498	MBV101643	38375	74559	SPY200858
14253	50437	BMA105820	26315	62499	MBV101665	38376	74560	SPY200859
14254	50438	BMA105823	26316	62500	MBV101674	38377	74561	SPY200861
14255	50439	BMA105826	26317	62501	MBV101680	38378	74562	SPY200862
14256	50440	BMA105857	26318	62502	MBV101684	38379	74563	SPY200867
14257	50441	BMA105859	26319	62503	MBV101707	38380	74564	SPY200868
14258	50442	BMA105923	26320	62504	MBV101709	38381	74565	SPY200869
14259	50443	BMA105933	26321	62505	MBV101736	38382	74566	SPY200872
14260	50444	BMA105956	26322	62506	MBV101739	38383	74567	SPY200879
14261	50445	BMA105964	26323	62507	MBV101758	38384	74568	SPY200880
14262	50446	BMA105967	26324	62508	MBV101766	38385	74569	SPY200883
14263	50447	BMA105976	26325	62509	MBV101812	38386	74570	SPY200885
14264	50448	BMA105986	26326	62510	MBV101815	38387	74571	SPY200887
14265	50449	BMA105987	26327	62511	MBV101835	38388	74572	SPY200888
14266	50450	BMA105998	26328	62512	MBV101858	38389	74573	SPY200890
14267	50451	BMA106009	26329	62513	MBV101864	38390	74574	SPY200895
14268	50452	BMA106019	26330	62514	MBV101876	38391	74575	SPY200896
14269	50453	BMA106049	26331	62515	MBV101882	38392	74576	SPY200907
14270	50454	BMA106052	26332	62516	MBV101887	38393	74577	SPY200908
14271	50455	BMA106069	26333	62517	MBV101890	38394	74578	SPY200913
14272	50456	BMA106091	26334	62518	MBV101892	38395	74579	SPY200915
14273	50457	BMA106098	26335	62519	MBV101894	38396	74580	SPY200916
14274	50458	BMA106126	26336	62520	MBV101896	38397	74581	SPY200917
14275	50459	BMA106132	26337	62521	MBV101906	38398	74582	SPY200919
14276	50460	BMA106139	26338	62522	MBV101946	38399	74583	SPY200920
14277	50461	BMA106142	26339	62523	MBV101949	38400	74584	SPY200930
14278	50462	BMA106155	26340	62524	MBV101961	38401	74585	SPY200931
14279	50463	BMA106167	26341	62525	MBV101962	38402	74586	SPY200932
14280	50464	BMA106168	26342	62526	MBV101965	38403	74587	SPY200933
14281	50465	BMA106181	26343	62527	MBV101967	38404	74588	SPY200934
14282	50466	BMA106189	26344	62528	MBV101975	38405	74589	SPY200938
14283	50467	BMA106204	26345	62529	MBV101982	38406	74590	SPY200940
14284	50468	BMA106211	26346	62530	MBV101983	38407	74591	SPY200944
14285	50469	BMA106222	26347	62531	MBV101993	38408	74592	SPY200945
14286	50470	BMA106224	26348	62532	MBV102006	38409	74593	SPY200946
14287	50471	BMA106229	26349	62533	MBV102008	38410	74594	SPY200949
14288	50472	BMA106255	26350	62534	MBV102010	38411	74595	SPY200951
14289	50473	BMA106256	26351	62535	MBV102011	38412	74596	SPY200954
14290	50474	BMA106265	26352	62536	MBV102018	38413	74597	SPY200960
14291	50475	BMA106266	26353	62537	MBV102031	38414	74598	SPY200961
14292	50476	BMA106268	26354	62538	MBV102034	38415	74599	SPY200963
14293	50477	BMA106271	26355	62539	MBV102038	38416	74600	SPY200970
14294	50478	BMA106277	26356	62540	MBV102040	38417	74601	SPY200972
14295	50479	BMA106285	26357	62541	MBV102041	38418	74602	SPY200974

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14296	50480	BMA106286	26358	62542	MBV102042	38419	74603	SPY200975
14297	50481	BMA106290	26359	62543	MBV102043	38420	74604	SPY200983
14298	50482	BMA106298	26360	62544	MBV102049	38421	74605	SPY200985
14299	50483	BMA106301	26361	62545	MBV102059	38422	74606	SPY200986
14300	50484	BMA106305	26362	62546	MBV102077	38423	74607	SPY200987
14301	50485	BMA106321	26363	62547	MBV102079	38424	74608	SPY200989
14302	50486	BMA106380	26364	62548	MBV102102	38425	74609	SPY200996
14303	50487	BMA106390	26365	62549	MBV102118	38426	74610	SPY201005
14304	50488	BMA106393	26366	62550	MBV102120	38427	74611	SPY201006
14305	50489	BMA106404	26367	62551	MBV102135	38428	74612	SPY201011
14306	50490	BMA106412	26368	62552	MBV102144	38429	74613	SPY201019
14307	50491	BMA106450	26369	62553	MBV102145	38430	74614	SPY201020
14308	50492	BMA106451	26370	62554	MBV102147	38431	74615	SPY201023
14309	50493	BMA106456	26371	62555	MBV102150	38432	74616	SPY201024
14310	50494	BMA106459	26372	62556	MBV102152	38433	74617	SPY201025
14311	50495	BMA106471	26373	62557	MBV102153	38434	74618	SPY201026
14312	50496	BMA106473	26374	62558	MBV102154	38435	74619	SPY201027
14313	50497	BMA106479	26375	62559	MBV102159	38436	74620	SPY201028
14314	50498	BMA106485	26376	62560	MBV102164	38437	74621	SPY201033
14315	50499	BMA106486	26377	62561	MBV102165	38438	74622	SPY201041
14316	50500	BMA106487	26378	62562	MBV102172	38439	74623	SPY201042
14317	50501	BMA106496	26379	62563	MBV102185	38440	74624	SPY201046
14318	50502	BMA106564	26380	62564	MBV102187	38441	74625	SPY201053
14319	50503	BMA106567	26381	62565	MBV102190	38442	74626	SPY201054
14320	50504	BMA106574	26382	62566	MBV102204	38443	74627	SPY201055
14321	50505	BMA106581	26383	62567	MBV102230	38444	74628	SPY201058
14322	50506	BMA106590	26384	62568	MBV102255	38445	74629	SPY201063
14323	50507	BMA106607	26385	62569	MBV102260	38446	74630	SPY201070
14324	50508	BMA106616	26386	62570	MBV102277	38447	74631	SPY201071
14325	50509	BMA106620	26387	62571	MBV102280	38448	74632	SPY201080
14326	50510	BMA106660	26388	62572	MBV102282	38449	74633	SPY201083
14327	50511	BMA106672	26389	62573	MBV102283	38450	74634	SPY201084
14328	50512	BMA106679	26390	62574	MBV102284	38451	74635	SPY201085
14329	50513	BMA106683	26391	62575	MBV102285	38452	74636	SPY201087
14330	50514	BMA106687	26392	62576	MBV102286	38453	74637	SPY201088
14331	50515	BMA106704	26393	62577	MBV102292	38454	74638	SPY201089
14332	50516	BMA106711	26394	62578	MBV102295	38455	74639	SPY201103
14333	50517	BMA106771	26395	62579	MBV102296	38456	74640	SPY201144
14334	50518	BMA106790	26396	62580	MBV102299	38457	74641	SPY201146
14335	50519	BMA106800	26397	62581	MBV102300	38458	74642	SPY201152
14336	50520	BMA106812	26398	62582	MBV102301	38459	74643	SPY201154
14337	50521	BMA106830	26399	62583	MBV102303	38460	74644	SPY201161
14338	50522	BMA106841	26400	62584	MBV102319	38461	74645	SPY201162
14339	50523	BMA106854	26401	62585	MBV102321	38462	74646	SPY201164
14340	50524	BMA106862	26402	62586	MBV102332	38463	74647	SPY201165
14341	50525	BMA106909	26403	62587	MBV102338	38464	74648	SPY201168
14342	50526	BMA106913	26404	62588	MBV102346	38465	74649	SPY201169
14343	50527	BMA106924	26405	62589	MBV102351	38466	74650	SPY201170
14344	50528	BMA106934	26406	62590	MBV102356	38467	74651	SPY201171
14345	50529	BMA106945	26407	62591	MBV102357	38468	74652	SPY201172
14346	50530	BMA106949	26408	62592	MBV102362	38469	74653	SPY201173
14347	50531	BMA106985	26409	62593	MBV102363	38470	74654	SPY201174
14348	50532	BMA106998	26410	62594	MBV102364	38471	74655	SPY201176
14349	50533	BMA106999	26411	62595	MBV102365	38472	74656	SPY201177
14350	50534	BMA107004	26412	62596	MBV102370	38473	74657	SPY201178

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14351	50535	BMA107024	26413	62597	MBV102374	38474	74658	SPY201180
14352	50536	BMA107036	26414	62598	MBV102375	38475	74659	SPY201183
14353	50537	BMA107037	26415	62599	MBV102380	38476	74660	SPY201189
14354	50538	BMA107039	26416	62600	MBV102382	38477	74661	SPY201191
14355	50539	BMA107045	26417	62601	MBV102391	38478	74662	SPY201192
14356	50540	BMA107058	26418	62602	MBV102396	38479	74663	SPY201210
14357	50541	BMA107078	26419	62603	MBV102400	38480	74664	SPY201217
14358	50542	BMA107083	26420	62604	MBV102407	38481	74665	SPY201222
14359	50543	BMA107095	26421	62605	MBV102420	38482	74666	SPY201225
14360	50544	BMA107107	26422	62606	MBV102427	38483	74667	SPY201239
14361	50545	BMA107144	26423	62607	MBV102431	38484	74668	SPY201246
14362	50546	BMA107156	26424	62608	MBV102452	38485	74669	SPY201249
14363	50547	BMA107161	26425	62609	MBV102463	38486	74670	SPY201251
14364	50548	BMA107163	26426	62610	MBV102473	38487	74671	SPY201253
14365	50549	BMA107174	26427	62611	MBV102482	38488	74672	SPY201258
14366	50550	BMA107179	26428	62612	MBV102489	38489	74673	SPY201260
14367	50551	BMA107182	26429	62613	MBV102501	38490	74674	SPY201268
14368	50552	BMA107188	26430	62614	MBV102520	38491	74675	SPY201271
14369	50553	BMA107189	26431	62615	MBV102540	38492	74676	SPY201273
14370	50554	BMA107198	26432	62616	MBV102542	38493	74677	SPY201274
14371	50555	BMA107217	26433	62617	MBV102555	38494	74678	SPY201279
14372	50556	BMA107218	26434	62618	MBV102577	38495	74679	SPY201280
14373	50557	BMA107258	26435	62619	MBV102582	38496	74680	SPY201281
14374	50558	BMA107260	26436	62620	MBV102602	38497	74681	SPY201282
14375	50559	BMA107268	26437	62621	MBV102605	38498	74682	SPY201283
14376	50560	BMA107273	26438	62622	MBV102613	38499	74683	SPY201284
14377	50561	BMA107275	26439	62623	MBV102614	38500	74684	SPY201289
14378	50562	BMA107339	26440	62624	MBV102618	38501	74685	SPY201293
14379	50563	BMA107341	26441	62625	MBV102622	38502	74686	SPY201295
14380	50564	BMA107343	26442	62626	MBV102634	38503	74687	SPY201298
14381	50565	BMA107358	26443	62627	MBV102643	38504	74688	SPY201299
14382	50566	BMA107387	26444	62628	MBV102645	38505	74689	SPY201302
14383	50567	BMA107390	26445	62629	MBV102675	38506	74690	SPY201303
14384	50568	BMA107401	26446	62630	MBV102693	38507	74691	SPY201309
14385	50569	BMA107414	26447	62631	MBV102694	38508	74692	SPY201310
14386	50570	BMA107415	26448	62632	MBV102695	38509	74693	SPY201317
14387	50571	BMA107416	26449	62633	MBV102718	38510	74694	SPY201321
14388	50572	BMA107419	26450	62634	MBV102731	38511	74695	SPY201324
14389	50573	BMA107429	26451	62635	MBV102765	38512	74696	SPY201327
14390	50574	BMA107444	26452	62636	MBV102766	38513	74697	SPY201329
14391	50575	BMA107479	26453	62637	MBV102804	38514	74698	SPY201332
14392	50576	BMA107485	26454	62638	MBV102813	38515	74699	SPY201336
14393	50577	BMA107520	26455	62639	MBV102830	38516	74700	SPY201337
14394	50578	BMA107539	26456	62640	MBV102833	38517	74701	SPY201341
14395	50579	BMA107557	26457	62641	MBV102834	38518	74702	SPY201342
14396	50580	BMA107559	26458	62642	MBV102851	38519	74703	SPY201343
14397	50581	BMA107589	26459	62643	MBV102870	38520	74704	SPY201344
14398	50582	BMA107598	26460	62644	MBV102872	38521	74705	SPY201345
14399	50583	BMA107603	26461	62645	MBV102878	38522	74706	SPY201346
14400	50584	BMA107628	26462	62646	MBV102879	38523	74707	SPY201347
14401	50585	BMA107634	26463	62647	MBV102883	38524	74708	SPY201348
14402	50586	BMA107682	26464	62648	MBV102908	38525	74709	SPY201349
14403	50587	BMA107694	26465	62649	MBV102918	38526	74710	SPY201350
14404	50588	BMA107718	26466	62650	MBV102941	38527	74711	SPY201351
14405	50589	BMA107732	26467	62651	MBV102991	38528	74712	SPY201352

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14406	50590	BMA107734	26468	62652	MBV103014	38529	74713	SPY201354
14407	50591	BMA107737	26469	62653	MBV103054	38530	74714	SPY201356
14408	50592	BMA107745	26470	62654	MBV103086	38531	74715	SPY201361
14409	50593	BMA107754	26471	62655	MBV103088	38532	74716	SPY201364
14410	50594	BMA107760	26472	62656	MBV103100	38533	74717	SPY201365
14411	50595	BMA107767	26473	62657	MBV103119	38534	74718	SPY201366
14412	50596	BMA107769	26474	62658	MBV103153	38535	74719	SPY201382
14413	50597	BMA107778	26475	62659	MBV103155	38536	74720	SPY201383
14414	50598	BMA107802	26476	62660	MBV103157	38537	74721	SPY201387
14415	50599	BMA107808	26477	62661	MBV103159	38538	74722	SPY201388
14416	50600	BMA107816	26478	62662	MBV103199	38539	74723	SPY201389
14417	50601	BMA107817	26479	62663	MBV103201	38540	74724	SPY201392
14418	50602	BMA107830	26480	62664	MBV103206	38541	74725	SPY201398
14419	50603	BMA107834	26481	62665	MBV103220	38542	74726	SPY201403
14420	50604	BMA107841	26482	62666	MBV103227	38543	74727	SPY201406
14421	50605	BMA107844	26483	62667	MBV103229	38544	74728	SPY201407
14422	50606	BMA107849	26484	62668	MBV103242	38545	74729	SPY201408
14423	50607	BMA107852	26485	62669	MBV103262	38546	74730	SPY201414
14424	50608	BMA107873	26486	62670	MBV103266	38547	74731	SPY201418
14425	50609	BMA107904	26487	62671	MBV103301	38548	74732	SPY201419
14426	50610	BMA107929	26488	62672	MBV103315	38549	74733	SPY201431
14427	50611	BMA107935	26489	62673	MBV103316	38550	74734	SPY201435
14428	50612	BMA107940	26490	62674	MBV103317	38551	74735	SPY201436
14429	50613	BMA107964	26491	62675	MBV103318	38552	74736	SPY201440
14430	50614	BMA107974	26492	62676	MBV103326	38553	74737	SPY201441
14431	50615	BMA107995	26493	62677	MBV103327	38554	74738	SPY201445
14432	50616	BMA108003	26494	62678	MBV103337	38555	74739	SPY201446
14433	50617	BMA108007	26495	62679	MBV103340	38556	74740	SPY201449
14434	50618	BMA108016	26496	62680	MBV103347	38557	74741	SPY201451
14435	50619	BMA108024	26497	62681	MBV103349	38558	74742	SPY201454
14436	50620	BMA108040	26498	62682	MBV103355	38559	74743	SPY201455
14437	50621	BMA108052	26499	62683	MBV103369	38560	74744	SPY201457
14438	50622	BMA108062	26500	62684	MBV103377	38561	74745	SPY201460
14439	50623	BMA108067	26501	62685	MBV103409	38562	74746	SPY201464
14440	50624	BMA108104	26502	62686	MBV103437	38563	74747	SPY201467
14441	50625	BMA108112	26503	62687	MBV103459	38564	74748	SPY201468
14442	50626	BMA108128	26504	62688	MBV103463	38565	74749	SPY201469
14443	50627	BMA108179	26505	62689	MBV103478	38566	74750	SPY201472
14444	50628	BMA108193	26506	62690	MBV103480	38567	74751	SPY201475
14445	50629	BMA108211	26507	62691	MBV103483	38568	74752	SPY201476
14446	50630	BMA108257	26508	62692	MBV103520	38569	74753	SPY201477
14447	50631	BMA108260	26509	62693	MBV103538	38570	74754	SPY201478
14448	50632	BMA108265	26510	62694	MBV103559	38571	74755	SPY201481
14449	50633	BMA108273	26511	62695	MBV103568	38572	74756	SPY201485
14450	50634	BMA108282	26512	62696	MBV103580	38573	74757	SPY201486
14451	50635	BMA108307	26513	62697	MBV103584	38574	74758	SPY201490
14452	50636	BMA108339	26514	62698	MBV103592	38575	74759	SPY201494
14453	50637	BMA108356	26515	62699	MBV103611	38576	74760	SPY201496
14454	50638	BMA108364	26516	62700	MBV103623	38577	74761	SPY201498
14455	50639	BMA108374	26517	62701	MBV103646	38578	74762	SPY201499
14456	50640	BMA108377	26518	62702	MBV103652	38579	74763	SPY201500
14457	50641	BMA108381	26519	62703	MBV103661	38580	74764	SPY201502
14458	50642	BMA108405	26520	62704	MBV103669	38581	74765	SPY201503
14459	50643	BMA108408	26521	62705	MBV103685	38582	74766	SPY201508
14460	50644	BMA108444	26522	62706	MBV103715	38583	74767	SPY201509

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14461	50645	BMA108445	26523	62707	MBV103792	38584	74768	SPY201510
14462	50646	BMA108446	26524	62708	MBV103797	38585	74769	SPY201512
14463	50647	BMA108469	26525	62709	MBV103820	38586	74770	SPY201513
14464	50648	BMA108472	26526	62710	MBV103842	38587	74771	SPY201517
14465	50649	BMA108476	26527	62711	MBV103852	38588	74772	SPY201519
14466	50650	BMA108485	26528	62712	MBV103890	38589	74773	SPY201522
14467	50651	BMA108492	26529	62713	MBV103898	38590	74774	SPY201526
14468	50652	BMA108518	26530	62714	MBV103903	38591	74775	SPY201527
14469	50653	BMA108528	26531	62715	MBV103911	38592	74776	SPY201530
14470	50654	BMA108532	26532	62716	MBV103927	38593	74777	SPY201532
14471	50655	BMA108540	26533	62717	MBV103935	38594	74778	SPY201537
14472	50656	BMA108546	26534	62718	MBV103944	38595	74779	SPY201539
14473	50657	BMA108557	26535	62719	MBV103969	38596	74780	SPY201542
14474	50658	BMA108572	26536	62720	MBV103988	38597	74781	SPY201545
14475	50659	BMA108578	26537	62721	MBV104007	38598	74782	SPY201569
14476	50660	BMA108586	26538	62722	MBV104023	38599	74783	SPY201573
14477	50661	BMA108589	26539	62723	MBV104034	38600	74784	SPY201576
14478	50662	BMA108591	26540	62724	MBV104087	38601	74785	SPY201582
14479	50663	BMA108596	26541	62725	MBV104099	38602	74786	SPY201584
14480	50664	BMA108603	26542	62726	MBV104110	38603	74787	SPY201587
14481	50665	BMA108604	26543	62727	MBV104142	38604	74788	SPY201589
14482	50666	BMA108610	26544	62728	MBV104175	38605	74789	SPY201590
14483	50667	BMA108617	26545	62729	MBV104176	38606	74790	SPY201593
14484	50668	BMA108642	26546	62730	MBV104192	38607	74791	SPY201596
14485	50669	BMA108656	26547	62731	MBV104256	38608	74792	SPY201597
14486	50670	BMA108659	26548	62732	MBV104268	38609	74793	SPY201599
14487	50671	BMA108673	26549	62733	MBV104272	38610	74794	SPY201600
14488	50672	BMA108675	26550	62734	MBV104294	38611	74795	SPY201604
14489	50673	BMA108677	26551	62735	MBV104295	38612	74796	SPY201605
14490	50674	BMA108689	26552	62736	MBV104303	38613	74797	SPY201607
14491	50675	BMA108695	26553	62737	MBV104310	38614	74798	SPY201609
14492	50676	BMA108699	26554	62738	MBV104380	38615	74799	SPY201612
14493	50677	BMA108730	26555	62739	MBV104384	38616	74800	SPY201613
14494	50678	BMA108732	26556	62740	MBV104392	38617	74801	SPY201614
14495	50679	BMA108753	26557	62741	MBV104403	38618	74802	SPY201616
14496	50680	BMA108770	26558	62742	MBV104411	38619	74803	SPY201621
14497	50681	BMA108791	26559	62743	MBV104414	38620	74804	SPY201637
14498	50682	BMA108797	26560	62744	MBV104423	38621	74805	SPY201640
14499	50683	BMA108816	26561	62745	MBV104427	38622	74806	SPY201643
14500	50684	BMA108842	26562	62746	MBV104430	38623	74807	SPY201648
14501	50685	BMA108844	26563	62747	MBV104431	38624	74808	SPY201649
14502	50686	BMA108868	26564	62748	MBV104432	38625	74809	SPY201651
14503	50687	BMA108899	26565	62749	MBV104444	38626	74810	SPY201653
14504	50688	BMA108903	26566	62750	MBV104448	38627	74811	SPY201658
14505	50689	BMA108919	26567	62751	MBV104450	38628	74812	SPY201660
14506	50690	BMA108930	26568	62752	MBV104453	38629	74813	SPY201662
14507	50691	BMA108958	26569	62753	MBV104454	38630	74814	SPY201664
14508	50692	BMA108966	26570	62754	MBV104457	38631	74815	SPY201667
14509	50693	BMA108967	26571	62755	MBV104498	38632	74816	SPY201668
14510	50694	BMA108973	26572	62756	MBV104527	38633	74817	SPY201669
14511	50695	BMA108976	26573	62757	MBV104554	38634	74818	SPY201670
14512	50696	BMA108987	26574	62758	MBV104557	38635	74819	SPY201672
14513	50697	BMA108998	26575	62759	MBV104571	38636	74820	SPY201676
14514	50698	BMA108999	26576	62760	MBV104576	38637	74821	SPY201677
14515	50699	BMA109015	26577	62761	MBV104588	38638	74822	SPY201678

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14516	50700	BMA109025	26578	62762	MBV104620	38639	74823	SPY201679
14517	50701	BMA109028	26579	62763	MBV104670	38640	74824	SPY201680
14518	50702	BMA109034	26580	62764	MBV104672	38641	74825	SPY201681
14519	50703	BMA109038	26581	62765	MBV104689	38642	74826	SPY201683
14520	50704	BMA109061	26582	62766	MBV104696	38643	74827	SPY201684
14521	50705	BMA109065	26583	62767	MBV104698	38644	74828	SPY201685
14522	50706	BMA109080	26584	62768	MBV104721	38645	74829	SPY201690
14523	50707	BMA109088	26585	62769	MBV104734	38646	74830	SPY201692
14524	50708	BMA109098	26586	62770	MBV104755	38647	74831	SPY201694
14525	50709	BMA109111	26587	62771	MBV104764	38648	74832	SPY201695
14526	50710	BMA109115	26588	62772	MBV104772	38649	74833	STM100028
14527	50711	BMA109143	26589	62773	MBV104783	38650	74834	STM100029
14528	50712	BMA109153	26590	62774	MBV104788	38651	74835	STM100030
14529	50713	BMA109166	26591	62775	MBV104795	38652	74836	STM100031
14530	50714	BMA109180	26592	62776	MBV104807	38653	74837	STM100032
14531	50715	BMA109188	26593	62777	MBV104826	38654	74838	STM100038
14532	50716	BMA109200	26594	62778	MBV104868	38655	74839	STM100041
14533	50717	BMA109211	26595	62779	MBV104872	38656	74840	STM100042
14534	50718	BMA109222	26596	62780	MBV104961	38657	74841	STM100044
14535	50719	BMA109225	26597	62781	MBV104988	38658	74842	STM100045
14536	50720	BMA109247	26598	62782	MBV105073	38659	74843	STM100053
14537	50721	BMA109275	26599	62783	MBV105077	38660	74844	STM100056
14538	50722	BMA109299	26600	62784	MBV105099	38661	74845	STM100058
14539	50723	BMA109305	26601	62785	MBV105108	38662	74846	STM100061
14540	50724	BMA109316	26602	62786	MBV105112	38663	74847	STM100064
14541	50725	BMA109323	26603	62787	MBV105125	38664	74848	STM100065
14542	50726	BMA109362	26604	62788	MBV105139	38665	74849	STM100071
14543	50727	BMA109379	26605	62789	MBV105140	38666	74850	STM100075
14544	50728	BMA109380	26606	62790	MBV105147	38667	74851	STM100076
14545	50729	BMA109386	26607	62791	MBV105157	38668	74852	STM100084
14546	50730	BMA109392	26608	62792	MBV105172	38669	74853	STM100091
14547	50731	BMA109400	26609	62793	MBV105191	38670	74854	STM100096
14548	50732	BMA109410	26610	62794	MBV105192	38671	74855	STM100098
14549	50733	BMA109411	26611	62795	MBV105206	38672	74856	STM100099
14550	50734	BMA109456	26612	62796	MBV105240	38673	74857	STM100100
14551	50735	BMA109458	26613	62797	MBV105246	38674	74858	STM100110
14552	50736	BMA109462	26614	62798	MBV105249	38675	74859	STM100148
14553	50737	BMA109464	26615	62799	MBV105256	38676	74860	STM100155
14554	50738	BMA109480	26616	62800	MBV105271	38677	74861	STM100156
14555	50739	BMA109485	26617	62801	MBV105275	38678	74862	STM100162
14556	50740	BMA109486	26618	62802	MBV105298	38679	74863	STM100178
14557	50741	BMA109512	26619	62803	MBV105301	38680	74864	STM100205
14558	50742	BMA109515	26620	62804	MBV105322	38681	74865	STM100221
14559	50743	BMA109523	26621	62805	MBV105328	38682	74866	STM100225
14560	50744	BMA109525	26622	62806	MBV105348	38683	74867	STM100236
14561	50745	BMA109531	26623	62807	MBV105349	38684	74868	STM100241
14562	50746	BMA109533	26624	62808	MBV105357	38685	74869	STM100243
14563	50747	BMA109546	26625	62809	MBV105361	38686	74870	STM100259
14564	50748	BMA109566	26626	62810	MBV105368	38687	74871	STM100261
14565	50749	BMA109567	26627	62811	MBV105373	38688	74872	STM100262
14566	50750	BMA109603	26628	62812	MBV105381	38689	74873	STM100287
14567	50751	BMA109607	26629	62813	MBV105382	38690	74874	STM100290
14568	50752	BMA109613	26630	62814	MBV105390	38691	74875	STM100292
14569	50753	BMA109618	26631	62815	MBV105423	38692	74876	STM100295
14570	50754	BMA109620	26632	62816	MBV105470	38693	74877	STM100312

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14571	50755	BMA109632	26633	62817	MBV105473	38694	74878	STM100342
14572	50756	BMA109637	26634	62818	MBV105490	38695	74879	STM100343
14573	50757	BMA109643	26635	62819	MBV105500	38696	74880	STM100346
14574	50758	BMA109716	26636	62820	MBV105502	38697	74881	STM100351
14575	50759	BMA109731	26637	62821	MBV105505	38698	74882	STM100357
14576	50760	BMA109746	26638	62822	MBV105506	38699	74883	STM100366
14577	50761	BMA109753	26639	62823	MBV105507	38700	74884	STM100368
14578	50762	BMA109760	26640	62824	MBV105513	38701	74885	STM100369
14579	50763	BMA109792	26641	62825	MBV105517	38702	74886	STM100371
14580	50764	BMA109810	26642	62826	MBV105519	38703	74887	STM100383
14581	50765	BMA109820	26643	62827	MBV105523	38704	74888	STM100395
14582	50766	BMA109843	26644	62828	MBV105525	38705	74889	STM100405
14583	50767	BMA109885	26645	62829	MBV105545	38706	74890	STM100412
14584	50768	BMA109897	26646	62830	MBV105546	38707	74891	STM100417
14585	50769	BMA109903	26647	62831	MBV105548	38708	74892	STM100428
14586	50770	BMA109904	26648	62832	MBV105554	38709	74893	STM100438
14587	50771	BMA109910	26649	62833	MBV105559	38710	74894	STM100439
14588	50772	BMA109935	26650	62834	MBV105572	38711	74895	STM100440
14589	50773	BMA109950	26651	62835	MBV105580	38712	74896	STM100443
14590	50774	BMA109972	26652	62836	MBV105595	38713	74897	STM100447
14591	50775	BMA109988	26653	62837	MBV105615	38714	74898	STM100453
14592	50776	BMA109995	26654	62838	MBV105633	38715	74899	STM100473
14593	50777	BMA110009	26655	62839	MBV105650	38716	74900	STM100485
14594	50778	BMA110016	26656	62840	MBV105653	38717	74901	STM100491
14595	50779	BMA110026	26657	62841	MBV105656	38718	74902	STM100492
14596	50780	BMA110028	26658	62842	MBV105674	38719	74903	STM100496
14597	50781	BMA110031	26659	62843	MBV105699	38720	74904	STM100504
14598	50782	BPT100007	26660	62844	MBV105708	38721	74905	STM100519
14599	50783	BPT100009	26661	62845	MBV105727	38722	74906	STM100530
14600	50784	BPT100010	26662	62846	MBV105746	38723	74907	STM100531
14601	50785	BPT100012	26663	62847	MBV105752	38724	74908	STM100532
14602	50786	BPT100013	26664	62848	MBV105819	38725	74909	STM100533
14603	50787	BPT100014	26665	62849	MBV105820	38726	74910	STM100542
14604	50788	BPT100015	26666	62850	MBV105826	38727	74911	STM100544
14605	50789	BPT100016	26667	62851	MBV105847	38728	74912	STM100550
14606	50790	BPT100020	26668	62852	MBV105866	38729	74913	STM100555
14607	50791	BPT100027	26669	62853	MBV105868	38730	74914	STM100558
14608	50792	BPT100036	26670	62854	MBV105886	38731	74915	STM100571
14609	50793	BPT100037	26671	62855	MBV105902	38732	74916	STM100573
14610	50794	BPT100038	26672	62856	MBV105903	38733	74917	STM100577
14611	50795	BPT100041	26673	62857	MBV105909	38734	74918	STM100579
14612	50796	BPT100043	26674	62858	MBV105923	38735	74919	STM100595
14613	50797	BPT100044	26675	62859	MBV106082	38736	74920	STM100598
14614	50798	BPT100046	26676	62860	MBV106113	38737	74921	STM100599
14615	50799	BPT100048	26677	62861	MBV106116	38738	74922	STM100605
14616	50800	BPT100050	26678	62862	MBV106174	38739	74923	STM100616
14617	50801	BPT100051	26679	62863	MBV106184	38740	74924	STM100618
14618	50802	BPT100055	26680	62864	MBV106185	38741	74925	STM100624
14619	50803	BPT100056	26681	62865	MBV106196	38742	74926	STM100644
14620	50804	BPT100078	26682	62866	MBV106198	38743	74927	STM100645
14621	50805	BPT100080	26683	62867	MBV106229	38744	74928	STM100647
14622	50806	BPT100083	26684	62868	MBV106232	38745	74929	STM100648
14623	50807	BPT100086	26685	62869	MBV106246	38746	74930	STM100668
14624	50808	BPT100089	26686	62870	MBV106247	38747	74931	STM100673
14625	50809	BPT100094	26687	62871	MBV106260	38748	74932	STM100679

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14626	50810	BPT100111	26688	62872	MBV106261	38749	74933	STM100698
14627	50811	BPT100114	26689	62873	MBV106263	38750	74934	STM100744
14628	50812	BPT100117	26690	62874	MCA100007	38751	74935	STM100755
14629	50813	BPT100120	26691	62875	MCA100009	38752	74936	STM100785
14630	50814	BPT100121	26692	62876	MCA100016	38753	74937	STM100815
14631	50815	BPT100124	26693	62877	MCA100019	38754	74938	STM100818
14632	50816	BPT100131	26694	62878	MCA100037	38755	74939	STM100837
14633	50817	BPT100134	26695	62879	MCA100038	38756	74940	STM100853
14634	50818	BPT100139	26696	62880	MCA100043	38757	74941	STM100858
14635	50819	BPT100142	26697	62881	MCA100045	38758	74942	STM100867
14636	50820	BPT100171	26698	62882	MCA100048	38759	74943	STM100870
14637	50821	BPT100181	26699	62883	MCA100065	38760	74944	STM100872
14638	50822	BPT100185	26700	62884	MCA100073	38761	74945	STM100875
14639	50823	BPT100190	26701	62885	MCA100082	38762	74946	STM100888
14640	50824	BPT100195	26702	62886	MCA100084	38763	74947	STM100894
14641	50825	BPT100197	26703	62887	MCA100086	38764	74948	STM100906
14642	50826	BPT100200	26704	62888	MCA100095	38765	74949	STM100915
14643	50827	BPT100204	26705	62889	MCA100098	38766	74950	STM100930
14644	50828	BPT100209	26706	62890	MCA100105	38767	74951	STM100933
14645	50829	BPT100211	26707	62891	MCA100109	38768	74952	STM100940
14646	50830	BPT100212	26708	62892	MCA100120	38769	74953	STM100965
14647	50831	BPT100219	26709	62893	MCA100121	38770	74954	STM100985
14648	50832	BPT100226	26710	62894	MCA100127	38771	74955	STM100987
14649	50833	BPT100242	26711	62895	MCA100137	38772	74956	STM100988
14650	50834	BPT100243	26712	62896	MCA100140	38773	74957	STM101000
14651	50835	BPT100246	26713	62897	MCA100141	38774	74958	STM101003
14652	50836	BPT100248	26714	62898	MCA100147	38775	74959	STM101004
14653	50837	BPT100250	26715	62899	MCA100153	38776	74960	STM101008
14654	50838	BPT100252	26716	62900	MCA100154	38777	74961	STM101010
14655	50839	BPT100256	26717	62901	MCA100155	38778	74962	STM101011
14656	50840	BPT100257	26718	62902	MCA100157	38779	74963	STM101019
14657	50841	BPT100260	26719	62903	MCA100158	38780	74964	STM101022
14658	50842	BPT100261	26720	62904	MCA100159	38781	74965	STM101036
14659	50843	BPT100264	26721	62905	MCA100160	38782	74966	STM101037
14660	50844	BPT100275	26722	62906	MCA100162	38783	74967	STM101038
14661	50845	BPT100276	26723	62907	MCA100181	38784	74968	STM101058
14662	50846	BPT100278	26724	62908	MCA100182	38785	74969	STM101083
14663	50847	BPT100284	26725	62909	MCA100190	38786	74970	STM101084
14664	50848	BPT100285	26726	62910	MCA100196	38787	74971	STM101087
14665	50849	BPT100287	26727	62911	MCA100197	38788	74972	STM101095
14666	50850	BPT100288	26728	62912	MCA100198	38789	74973	STM101102
14667	50851	BPT100292	26729	62913	MCA100203	38790	74974	STM101106
14668	50852	BPT100293	26730	62914	MCA100218	38791	74975	STM101111
14669	50853	BPT100299	26731	62915	MCA100219	38792	74976	STM101124
14670	50854	BPT100319	26732	62916	MCA100220	38793	74977	STM101128
14671	50855	BPT100336	26733	62917	MCA100223	38794	74978	STM101130
14672	50856	BPT100337	26734	62918	MCA100227	38795	74979	STM101142
14673	50857	BPT100358	26735	62919	MCA100230	38796	74980	STM101187
14674	50858	BPT100362	26736	62920	MCA100231	38797	74981	STM101198
14675	50859	BPT100366	26737	62921	MCA100232	38798	74982	STM101233
14676	50860	BPT100372	26738	62922	MCA100242	38799	74983	STM101235
14677	50861	BPT100384	26739	62923	MCA100248	38800	74984	STM101237
14678	50862	BPT100393	26740	62924	MCA100249	38801	74985	STM101254
14679	50863	BPT100396	26741	62925	MCA100250	38802	74986	STM101260
14680	50864	BPT100398	26742	62926	MCA100251	38803	74987	STM101264

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14681	50865	BPT100402	26743	62927	MCA100252	38804	74988	STM101266
14682	50866	BPT100403	26744	62928	MCA100253	38805	74989	STM101268
14683	50867	BPT100429	26745	62929	MCA100254	38806	74990	STM101271
14684	50868	BPT100432	26746	62930	MCA100257	38807	74991	STM101280
14685	50869	BPT100434	26747	62931	MCA100258	38808	74992	STM101284
14686	50870	BPT100444	26748	62932	MCA100273	38809	74993	STM101286
14687	50871	BPT100447	26749	62933	MCA100276	38810	74994	STM101289
14688	50872	BPT100453	26750	62934	MCA100281	38811	74995	STM101292
14689	50873	BPT100457	26751	62935	MCA100290	38812	74996	STM101295
14690	50874	BPT100459	26752	62936	MCA100296	38813	74997	STM101299
14691	50875	BPT100463	26753	62937	MCA100302	38814	74998	STM101302
14692	50876	BPT100464	26754	62938	MCA100312	38815	74999	STM101311
14693	50877	BPT100469	26755	62939	MCA100313	38816	75000	STM101314
14694	50878	BPT100477	26756	62940	MCA100324	38817	75001	STM101317
14695	50879	BPT100481	26757	62941	MCA100329	38818	75002	STM101319
14696	50880	BPT100486	26758	62942	MCA100331	38819	75003	STM101320
14697	50881	BPT100489	26759	62943	MCA100336	38820	75004	STM101329
14698	50882	BPT100493	26760	62944	MCA100338	38821	75005	STM101333
14699	50883	BPT100503	26761	62945	MCA100346	38822	75006	STM101336
14700	50884	BPT100507	26762	62946	MCA100347	38823	75007	STM101344
14701	50885	BPT100513	26763	62947	MCA100348	38824	75008	STM101349
14702	50886	BPT100515	26764	62948	MCA100353	38825	75009	STM101354
14703	50887	BPT100527	26765	62949	MCA100365	38826	75010	STM101370
14704	50888	BPT100529	26766	62950	MCA100366	38827	75011	STM101373
14705	50889	BPT100530	26767	62951	MCA100377	38828	75012	STM101376
14706	50890	BPT100533	26768	62952	MCA100378	38829	75013	STM101386
14707	50891	BPT100535	26769	62953	MCA100381	38830	75014	STM101389
14708	50892	BPT100541	26770	62954	MCA100389	38831	75015	STM101392
14709	50893	BPT100546	26771	62955	MCA100390	38832	75016	STM101401
14710	50894	BPT100548	26772	62956	MCA100395	38833	75017	STM101403
14711	50895	BPT100554	26773	62957	MCA100396	38834	75018	STM101419
14712	50896	BPT100571	26774	62958	MCA100406	38835	75019	STM101426
14713	50897	BPT100580	26775	62959	MCA100410	38836	75020	STM101429
14714	50898	BPT100584	26776	62960	MCA100416	38837	75021	STM101441
14715	50899	BPT100588	26777	62961	MCA100423	38838	75022	STM101443
14716	50900	BPT100611	26778	62962	MCA100424	38839	75023	STM101478
14717	50901	BPT100615	26779	62963	MCA100425	38840	75024	STM101479
14718	50902	BPT100617	26780	62964	MCA100426	38841	75025	STM101482
14719	50903	BPT100623	26781	62965	MCA100427	38842	75026	STM101489
14720	50904	BPT100625	26782	62966	MCA100437	38843	75027	STM101492
14721	50905	BPT100629	26783	62967	MCA100438	38844	75028	STM101499
14722	50906	BPT100632	26784	62968	MCA100440	38845	75029	STM101551
14723	50907	BPT100635	26785	62969	MCA100454	38846	75030	STM101571
14724	50908	BPT100646	26786	62970	MCA100461	38847	75031	STM101572
14725	50909	BPT100647	26787	62971	MCA100464	38848	75032	STM101595
14726	50910	BPT100654	26788	62972	MCA100465	38849	75033	STM101597
14727	50911	BPT100657	26789	62973	MCA100471	38850	75034	STM101603
14728	50912	BPT100671	26790	62974	MCA100472	38851	75035	STM101606
14729	50913	BPT100672	26791	62975	MCA100475	38852	75036	STM101609
14730	50914	BPT100673	26792	62976	MCA100476	38853	75037	STM101620
14731	50915	BPT100681	26793	62977	MCA100478	38854	75038	STM101623
14732	50916	BPT100686	26794	62978	MCA100479	38855	75039	STM101632
14733	50917	BPT100689	26795	62979	MCA100484	38856	75040	STM101645
14734	50918	BPT100693	26796	62980	MCA100488	38857	75041	STM101647
14735	50919	BPT100695	26797	62981	MCA100490	38858	75042	STM101649

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14736	50920	BPT100698	26798	62982	MCA100492	38859	75043	STM101667
14737	50921	BPT100700	26799	62983	MCA100493	38860	75044	STM101669
14738	50922	BPT100702	26800	62984	MCA100501	38861	75045	STM101672
14739	50923	BPT100703	26801	62985	MCA100516	38862	75046	STM101673
14740	50924	BPT100709	26802	62986	MCA100523	38863	75047	STM101679
14741	50925	BPT100713	26803	62987	MCA100527	38864	75048	STM101682
14742	50926	BPT100719	26804	62988	MCA100528	38865	75049	STM101688
14743	50927	BPT100743	26805	62989	MCA100529	38866	75050	STM101689
14744	50928	BPT100744	26806	62990	MCA100542	38867	75051	STM101734
14745	50929	BPT100746	26807	62991	MCA100556	38868	75052	STM101744
14746	50930	BPT100756	26808	62992	MCA100557	38869	75053	STM101769
14747	50931	BPT100758	26809	62993	MCA100559	38870	75054	STM101784
14748	50932	BPT100765	26810	62994	MCA100560	38871	75055	STM101795
14749	50933	BPT100780	26811	62995	MCA100561	38872	75056	STM101797
14750	50934	BPT100783	26812	62996	MCA100562	38873	75057	STM101808
14751	50935	BPT100784	26813	62997	MCA100567	38874	75058	STM101814
14752	50936	BPT100787	26814	62998	MCA100569	38875	75059	STM101822
14753	50937	BPT100790	26815	62999	MCA100571	38876	75060	STM101827
14754	50938	BPT100791	26816	63000	MCA100584	38877	75061	STM101842
14755	50939	BPT100797	26817	63001	MCA100597	38878	75062	STM101851
14756	50940	BPT100802	26818	63002	MCA100598	38879	75063	STM101854
14757	50941	BPT100805	26819	63003	MCA100604	38880	75064	STM101859
14758	50942	BPT100807	26820	63004	MCA100612	38881	75065	STM101862
14759	50943	BPT100810	26821	63005	MCA100618	38882	75066	STM101870
14760	50944	BPT100811	26822	63006	MCA100619	38883	75067	STM101879
14761	50945	BPT100813	26823	63007	MCA100620	38884	75068	STM101882
14762	50946	BPT100814	26824	63008	MCA100628	38885	75069	STM101885
14763	50947	BPT100821	26825	63009	MCA100629	38886	75070	STM101897
14764	50948	BPT100829	26826	63010	MCA100630	38887	75071	STM101920
14765	50949	BPT100831	26827	63011	MCA100631	38888	75072	STM101947
14766	50950	BPT100834	26828	63012	MCA100632	38889	75073	STM101956
14767	50951	BPT100841	26829	63013	MCA100637	38890	75074	STM101972
14768	50952	BPT100842	26830	63014	MCA100651	38891	75075	STM101984
14769	50953	BPT100844	26831	63015	MCA100654	38892	75076	STM101988
14770	50954	BPT100845	26832	63016	MCA100657	38893	75077	STM101990
14771	50955	BPT100846	26833	63017	MCA100667	38894	75078	STM102018
14772	50956	BPT100847	26834	63018	MCA100669	38895	75079	STM102035
14773	50957	BPT100848	26835	63019	MCA100671	38896	75080	STM102039
14774	50958	BPT100849	26836	63020	MCA100679	38897	75081	STM102043
14775	50959	BPT100850	26837	63021	MCA100687	38898	75082	STM102044
14776	50960	BPT100851	26838	63022	MCA100693	38899	75083	STM102049
14777	50961	BPT100852	26839	63023	MCA100694	38900	75084	STM102051
14778	50962	BPT100861	26840	63024	MCA100700	38901	75085	STM102055
14779	50963	BPT100864	26841	63025	MCA100701	38902	75086	STM102056
14780	50964	BPT100865	26842	63026	MCA100711	38903	75087	STM102057
14781	50965	BPT100866	26843	63027	MCA100718	38904	75088	STM102058
14782	50966	BPT100867	26844	63028	MCA100722	38905	75089	STM102060
14783	50967	BPT100868	26845	63029	MCA100738	38906	75090	STM102066
14784	50968	BPT100869	26846	63030	MCA100749	38907	75091	STM102067
14785	50969	BPT100871	26847	63031	MCA100752	38908	75092	STM102069
14786	50970	BPT100872	26848	63032	MCA100755	38909	75093	STM102072
14787	50971	BPT100873	26849	63033	MCA100762	38910	75094	STM102073
14788	50972	BPT100876	26850	63034	MCA100763	38911	75095	STM102120
14789	50973	BPT100880	26851	63035	MCA100766	38912	75096	STM102124
14790	50974	BPT100884	26852	63036	MCA100770	38913	75097	STM102125

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14791	50975	BPT100886	26853	63037	MCA100771	38914	75098	STM102133
14792	50976	BPT100891	26854	63038	MCA100772	38915	75099	STM102138
14793	50977	BPT100892	26855	63039	MCA100776	38916	75100	STM102145
14794	50978	BPT100893	26856	63040	MCA100777	38917	75101	STM102148
14795	50979	BPT100894	26857	63041	MCA100778	38918	75102	STM102165
14796	50980	BPT100895	26858	63042	MCA100779	38919	75103	STM102169
14797	50981	BPT100896	26859	63043	MCA100780	38920	75104	STM102195
14798	50982	BPT100897	26860	63044	MCA100781	38921	75105	STM102200
14799	50983	BPT100902	26861	63045	MCA100787	38922	75106	STM102205
14800	50984	BPT100905	26862	63046	MCA100789	38923	75107	STM102228
14801	50985	BPT100907	26863	63047	MCA100794	38924	75108	STM102230
14802	50986	BPT100911	26864	63048	MCA100796	38925	75109	STM102231
14803	50987	BPT100913	26865	63049	MCA100801	38926	75110	STM102232
14804	50988	BPT100915	26866	63050	MCA100802	38927	75111	STM102234
14805	50989	BPT100922	26867	63051	MCA100805	38928	75112	STM102243
14806	50990	BPT100924	26868	63052	MCA100807	38929	75113	STM102259
14807	50991	BPT100926	26869	63053	MCA100812	38930	75114	STM102262
14808	50992	BPT100929	26870	63054	MCA100816	38931	75115	STM102273
14809	50993	BPT100934	26871	63055	MCA100818	38932	75116	STM102277
14810	50994	BPT100938	26872	63056	MCA100819	38933	75117	STM102282
14811	50995	BPT100939	26873	63057	MCA100820	38934	75118	STM102305
14812	50996	BPT100941	26874	63058	MCA100821	38935	75119	STM102306
14813	50997	BPT100944	26875	63059	MCA100829	38936	75120	STM102307
14814	50998	BPT100946	26876	63060	MCA100831	38937	75121	STM102309
14815	50999	BPT100949	26877	63061	MCA100833	38938	75122	STM102321
14816	51000	BPT100950	26878	63062	MCA100840	38939	75123	STM102325
14817	51001	BPT100952	26879	63063	MCA100847	38940	75124	STM102354
14818	51002	BPT100964	26880	63064	MCA100862	38941	75125	STM102357
14819	51003	BPT100968	26881	63065	MCA100864	38942	75126	STM102393
14820	51004	BPT100969	26882	63066	MCA100865	38943	75127	STM102408
14821	51005	BPT100971	26883	63067	MCA100866	38944	75128	STM102429
14822	51006	BPT100972	26884	63068	MCA100868	38945	75129	STM102478
14823	51007	BPT100973	26885	63069	MCA100879	38946	75130	STM102482
14824	51008	BPT100982	26886	63070	MCA100880	38947	75131	STM102487
14825	51009	BPT100983	26887	63071	MCA100888	38948	75132	STM102496
14826	51010	BPT100984	26888	63072	MCA100895	38949	75133	STM102500
14827	51011	BPT100985	26889	63073	MCA100897	38950	75134	STM102501
14828	51012	BPT100991	26890	63074	MCA100898	38951	75135	STM102511
14829	51013	BPT100993	26891	63075	MCA100901	38952	75136	STM102557
14830	51014	BPT100995	26892	63076	MCA100913	38953	75137	STM102569
14831	51015	BPT101006	26893	63077	MCA100914	38954	75138	STM102581
14832	51016	BPT101009	26894	63078	MCA100916	38955	75139	STM102603
14833	51017	BPT101013	26895	63079	MCA100917	38956	75140	STM102604
14834	51018	BPT101024	26896	63080	MCA100918	38957	75141	STM102620
14835	51019	BPT101025	26897	63081	MCA100931	38958	75142	STM102646
14836	51020	BPT101027	26898	63082	MCA100934	38959	75143	STM102670
14837	51021	BPT101039	26899	63083	MCA100938	38960	75144	STM102673
14838	51022	BPT101042	26900	63084	MCA100943	38961	75145	STM102682
14839	51023	BPT101052	26901	63085	MCA100944	38962	75146	STM102687
14840	51024	BPT101055	26902	63086	MCA100953	38963	75147	STM102713
14841	51025	BPT101066	26903	63087	MCA100956	38964	75148	STM102717
14842	51026	BPT101079	26904	63088	MCA100961	38965	75149	STM102718
14843	51027	BPT101088	26905	63089	MCA100969	38966	75150	STM102719
14844	51028	BPT101104	26906	63090	MCA100972	38967	75151	STM102720
14845	51029	BPT101105	26907	63091	MCA100979	38968	75152	STM102721

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14846	51030	BPT101108	26908	63092	MCA100983	38969	75153	STM102722
14847	51031	BPT101109	26909	63093	MCA100984	38970	75154	STM102723
14848	51032	BPT101110	26910	63094	MCA100998	38971	75155	STM102724
14849	51033	BPT101111	26911	63095	MCA100999	38972	75156	STM102726
14850	51034	BPT101112	26912	63096	MCA101000	38973	75157	STM102728
14851	51035	BPT101113	26913	63097	MCA101001	38974	75158	STM102735
14852	51036	BPT101116	26914	63098	MCA101002	38975	75159	STM102737
14853	51037	BPT101117	26915	63099	MCA101003	38976	75160	STM102743
14854	51038	BPT101119	26916	63100	MCA101004	38977	75161	STM102752
14855	51039	BPT101121	26917	63101	MCA101005	38978	75162	STM102761
14856	51040	BPT101128	26918	63102	MCA101007	38979	75163	STM102772
14857	51041	BPT101129	26919	63103	MCA101008	38980	75164	STM102778
14858	51042	BPT101131	26920	63104	MCA101024	38981	75165	STM102779
14859	51043	BPT101141	26921	63105	MCA101028	38982	75166	STM102790
14860	51044	BPT101142	26922	63106	MCA101042	38983	75167	STM102797
14861	51045	BPT101143	26923	63107	MCA101046	38984	75168	STM102801
14862	51046	BPT101144	26924	63108	MCA101054	38985	75169	STM102807
14863	51047	BPT101145	26925	63109	MCA101061	38986	75170	STM102809
14864	51048	BPT101147	26926	63110	MCA101062	38987	75171	STM102815
14865	51049	BPT101149	26927	63111	MCA101063	38988	75172	STM102826
14866	51050	BPT101152	26928	63112	MCA101080	38989	75173	STM102828
14867	51051	BPT101155	26929	63113	MCA101084	38990	75174	STM102829
14868	51052	BPT101160	26930	63114	MCA101086	38991	75175	STM102832
14869	51053	BPT101163	26931	63115	MCA101090	38992	75176	STM102840
14870	51054	BPT101177	26932	63116	MCA101093	38993	75177	STM102843
14871	51055	BPT101183	26933	63117	MCA101097	38994	75178	STM102857
14872	51056	BPT101186	26934	63118	MCA101098	38995	75179	STM102859
14873	51057	BPT101189	26935	63119	MCA101099	38996	75180	STM102860
14874	51058	BPT101198	26936	63120	MCA101101	38997	75181	STM102862
14875	51059	BPT101199	26937	63121	MCA101104	38998	75182	STM102863
14876	51060	BPT101206	26938	63122	MCA101111	38999	75183	STM102864
14877	51061	BPT101209	26939	63123	MCA101113	39000	75184	STM102875
14878	51062	BPT101227	26940	63124	MCA101114	39001	75185	STM102876
14879	51063	BPT101248	26941	63125	MCA101119	39002	75186	STM102884
14880	51064	BPT101258	26942	63126	MCA101120	39003	75187	STM102886
14881	51065	BPT101280	26943	63127	MCA101122	39004	75188	STM102887
14882	51066	BPT101284	26944	63128	MCA101128	39005	75189	STM102888
14883	51067	BPT101286	26945	63129	MCA101135	39006	75190	STM102889
14884	51068	BPT101287	26946	63130	MCA101138	39007	75191	STM102890
14885	51069	BPT101291	26947	63131	MCA101145	39008	75192	STM102891
14886	51070	BPT101315	26948	63132	MCA101148	39009	75193	STM102892
14887	51071	BPT101318	26949	63133	MCA101150	39010	75194	STM102893
14888	51072	BPT101319	26950	63134	MCA101153	39011	75195	STM102894
14889	51073	BPT101320	26951	63135	MCA101156	39012	75196	STM102897
14890	51074	BPT101328	26952	63136	MCA101163	39013	75197	STM102899
14891	51075	BPT101335	26953	63137	MCA101166	39014	75198	STM102905
14892	51076	BPT101337	26954	63138	MCA101167	39015	75199	STM102920
14893	51077	BPT101343	26955	63139	MCA101168	39016	75200	STM102922
14894	51078	BPT101346	26956	63140	MCA101170	39017	75201	STM102926
14895	51079	BPT101355	26957	63141	MCA101178	39018	75202	STM102957
14896	51080	BPT101368	26958	63142	MCA101185	39019	75203	STM102972
14897	51081	BPT101374	26959	63143	MCA101187	39020	75204	STM102974
14898	51082	BPT101378	26960	63144	MCA101190	39021	75205	STM103004
14899	51083	BPT101379	26961	63145	MCA101196	39022	75206	STM103008
14900	51084	BPT101383	26962	63146	MCA101198	39023	75207	STM103011

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14901	51085	BPT101387	26963	63147	MCA101205	39024	75208	STM103015
14902	51086	BPT101390	26964	63148	MCA101206	39025	75209	STM103039
14903	51087	BPT101393	26965	63149	MCA101207	39026	75210	STM103048
14904	51088	BPT101394	26966	63150	MCA101216	39027	75211	STM103062
14905	51089	BPT101397	26967	63151	MCA101228	39028	75212	STM103119
14906	51090	BPT101398	26968	63152	MCA101231	39029	75213	STM103130
14907	51091	BPT101402	26969	63153	MCA101238	39030	75214	STM103140
14908	51092	BPT101404	26970	63154	MCA101240	39031	75215	STM103141
14909	51093	BPT101405	26971	63155	MCA101241	39032	75216	STM103144
14910	51094	BPT101412	26972	63156	MCA101243	39033	75217	STM103149
14911	51095	BPT101413	26973	63157	MCA101251	39034	75218	STM103155
14912	51096	BPT101418	26974	63158	MCA101252	39035	75219	STM103167
14913	51097	BPT101420	26975	63159	MCA101253	39036	75220	STM103175
14914	51098	BPT101422	26976	63160	MCA101259	39037	75221	STM103176
14915	51099	BPT101425	26977	63161	MCA101267	39038	75222	STM103177
14916	51100	BPT101434	26978	63162	MCA101274	39039	75223	STM103181
14917	51101	BPT101439	26979	63163	MCA101278	39040	75224	STM103197
14918	51102	BPT101441	26980	63164	MCA101289	39041	75225	STM103199
14919	51103	BPT101443	26981	63165	MCA101313	39042	75226	STM103201
14920	51104	BPT101446	26982	63166	MCA101332	39043	75227	STM103203
14921	51105	BPT101447	26983	63167	MCA101336	39044	75228	STM103213
14922	51106	BPT101450	26984	63168	MCA101345	39045	75229	STM103214
14923	51107	BPT101457	26985	63169	MCA101347	39046	75230	STM103221
14924	51108	BPT101460	26986	63170	MCA101348	39047	75231	STM103236
14925	51109	BPT101468	26987	63171	MCA101349	39048	75232	STM103244
14926	51110	BPT101485	26988	63172	MCA101372	39049	75233	STM103254
14927	51111	BPT101490	26989	63173	MCA101373	39050	75234	STM103286
14928	51112	BPT101492	26990	63174	MCA101382	39051	75235	STM103300
14929	51113	BPT101495	26991	63175	MCA101384	39052	75236	STM103301
14930	51114	BPT101499	26992	63176	MCA101385	39053	75237	STM103304
14931	51115	BPT101500	26993	63177	MCA101391	39054	75238	STM103352
14932	51116	BPT101508	26994	63178	MCA101397	39055	75239	STM103353
14933	51117	BPT101515	26995	63179	MCA101414	39056	75240	STM103355
14934	51118	BPT101520	26996	63180	MCA101417	39057	75241	STM103357
14935	51119	BPT101552	26997	63181	MCA101422	39058	75242	STM103396
14936	51120	BPT101554	26998	63182	MCA101426	39059	75243	STM103402
14937	51121	BPT101559	26999	63183	MCA101429	39060	75244	STM103417
14938	51122	BPT101569	27000	63184	MCA101440	39061	75245	STM103420
14939	51123	BPT101571	27001	63185	MCA101444	39062	75246	STM103421
14940	51124	BPT101578	27002	63186	MCA101455	39063	75247	STM103422
14941	51125	BPT101584	27003	63187	MCA101464	39064	75248	STM103427
14942	51126	BPT101594	27004	63188	MCA101469	39065	75249	STM103428
14943	51127	BPT101608	27005	63189	MCA101470	39066	75250	STM103445
14944	51128	BPT101610	27006	63190	MCA101479	39067	75251	STM103446
14945	51129	BPT101628	27007	63191	MCA101482	39068	75252	STM103447
14946	51130	BPT101632	27008	63192	MCA101483	39069	75253	STM103448
14947	51131	BPT101634	27009	63193	MCA101495	39070	75254	STM103449
14948	51132	BPT101640	27010	63194	MCA101497	39071	75255	STM103450
14949	51133	BPT101641	27011	63195	MCA101498	39072	75256	STM103452
14950	51134	BPT101655	27012	63196	MCA101505	39073	75257	STM103457
14951	51135	BPT101657	27013	63197	MCA101508	39074	75258	STM103463
14952	51136	BPT101671	27014	63198	MCA101510	39075	75259	STM103468
14953	51137	BPT101673	27015	63199	MCA101518	39076	75260	STM103475
14954	51138	BPT101679	27016	63200	MCA101520	39077	75261	STM103492
14955	51139	BPT101695	27017	63201	MCA101522	39078	75262	STM103496

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
14956	51140	BPT101697	27018	63202	MCA101523	39079	75263	STM103497
14957	51141	BPT101700	27019	63203	MCA101524	39080	75264	STM103512
14958	51142	BPT101704	27020	63204	MCA101525	39081	75265	STM103526
14959	51143	BPT101706	27021	63205	MCA101528	39082	75266	STM103533
14960	51144	BPT101711	27022	63206	MCA101529	39083	75267	STM103534
14961	51145	BPT101720	27023	63207	MCA101546	39084	75268	STM103540
14962	51146	BPT101723	27024	63208	MCA101549	39085	75269	STM103542
14963	51147	BPT101729	27025	63209	MCA101550	39086	75270	STM103553
14964	51148	BPT101732	27026	63210	MCA101554	39087	75271	STM103556
14965	51149	BPT101741	27027	63211	MCA101556	39088	75272	STM103561
14966	51150	BPT101744	27028	63212	MCA101558	39089	75273	STM103563
14967	51151	BPT101750	27029	63213	MCA101569	39090	75274	STM103564
14968	51152	BPT101752	27030	63214	MCA101582	39091	75275	STM103579
14969	51153	BPT101760	27031	63215	MCA101601	39092	75276	STM103581
14970	51154	BPT101764	27032	63216	MCA101606	39093	75277	STM103582
14971	51155	BPT101774	27033	63217	MCA101618	39094	75278	STM103585
14972	51156	BPT101777	27034	63218	MCA101622	39095	75279	STM103587
14973	51157	BPT101778	27035	63219	MCA101632	39096	75280	STM103588
14974	51158	BPT101787	27036	63220	MCA101636	39097	75281	STM103592
14975	51159	BPT101790	27037	63221	MCA101639	39098	75282	STM103593
14976	51160	BPT101798	27038	63222	MCA101640	39099	75283	STM103595
14977	51161	BPT101799	27039	63223	MCA101641	39100	75284	STM103598
14978	51162	BPT101803	27040	63224	MCA101643	39101	75285	STM103607
14979	51163	BPT101805	27041	63225	MCA101652	39102	75286	STM103613
14980	51164	BPT101815	27042	63226	MCA101655	39103	75287	STM103616
14981	51165	BPT101825	27043	63227	MCA101660	39104	75288	STM103619
14982	51166	BPT101828	27044	63228	MCA101668	39105	75289	STM103622
14983	51167	BPT101834	27045	63229	MCA101670	39106	75290	STM103625
14984	51168	BPT101840	27046	63230	MCA101683	39107	75291	STM103626
14985	51169	BPT101854	27047	63231	MCA101684	39108	75292	STM103627
14986	51170	BPT101857	27048	63232	MCA101686	39109	75293	STM103628
14987	51171	BPT101858	27049	63233	MCA101689	39110	75294	STM103633
14988	51172	BPT101871	27050	63234	MCA101697	39111	75295	STM103634
14989	51173	BPT101875	27051	63235	MCA101703	39112	75296	STM103657
14990	51174	BPT101881	27052	63236	MCA101727	39113	75297	STM103675
14991	51175	BPT101882	27053	63237	MCA101753	39114	75298	STM103679
14992	51176	BPT101897	27054	63238	MCA101758	39115	75299	STM103692
14993	51177	BPT101903	27055	63239	MCA101759	39116	75300	STM103693
14994	51178	BPT101910	27056	63240	MCA101775	39117	75301	STM103706
14995	51179	BPT101914	27057	63241	MCA101811	39118	75302	STM103710
14996	51180	BPT101918	27058	63242	MCA101812	39119	75303	STM103712
14997	51181	BPT101923	27059	63243	MCA101839	39120	75304	STM103734
14998	51182	BPT101928	27060	63244	MCA101840	39121	75305	STM103742
14999	51183	BPT101929	27061	63245	MCA101858	39122	75306	STM103774
15000	51184	BPT101941	27062	63246	MCA101881	39123	75307	STM103776
15001	51185	BPT101953	27063	63247	MCA101882	39124	75308	STM103799
15002	51186	BPT101956	27064	63248	MCA101884	39125	75309	STM103806
15003	51187	BPT101957	27065	63249	MCA101910	39126	75310	STM103807
15004	51188	BPT101959	27066	63250	MCA101920	39127	75311	STM103813
15005	51189	BPT101965	27067	63251	MCA101940	39128	75312	STM103821
15006	51190	BPT101967	27068	63252	MCA101941	39129	75313	STM103830
15007	51191	BPT101969	27069	63253	MCA101946	39130	75314	STM103861
15008	51192	BPT101971	27070	63254	MCA101955	39131	75315	STM103909
15009	51193	BPT101987	27071	63255	MCA101962	39132	75316	STM103910
15010	51194	BPT101994	27072	63256	MCA101964	39133	75317	STM103911

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15011	51195	BPT102001	27073	63257	MCA101968	39134	75318	STM103913
15012	51196	BPT102002	27074	63258	MCA101969	39135	75319	STM103916
15013	51197	BPT102003	27075	63259	MCA101980	39136	75320	STM103922
15014	51198	BPT102004	27076	63260	MCA101981	39137	75321	STM103926
15015	51199	BPT102027	27077	63261	MCA101987	39138	75322	STM103952
15016	51200	BPT102032	27078	63262	MCA101994	39139	75323	STM103969
15017	51201	BPT102034	27079	63263	MCA101998	39140	75324	STM104010
15018	51202	BPT102039	27080	63264	MCA102001	39141	75325	STM104011
15019	51203	BPT102040	27081	63265	MCA102006	39142	75326	STM104015
15020	51204	BPT102042	27082	63266	MCA102056	39143	75327	STM104028
15021	51205	BPT102045	27083	63267	MCA102057	39144	75328	STM104044
15022	51206	BPT102059	27084	63268	MCA102058	39145	75329	STM104051
15023	51207	BPT102066	27085	63269	MCA102065	39146	75330	STM104054
15024	51208	BPT102072	27086	63270	MCA102097	39147	75331	STM104067
15025	51209	BPT102076	27087	63271	MCA102101	39148	75332	STM104079
15026	51210	BPT102078	27088	63272	MCA102133	39149	75333	STM104099
15027	51211	BPT102081	27089	63273	MCA102141	39150	75334	STM104115
15028	51212	BPT102085	27090	63274	MCA102158	39151	75335	STM104132
15029	51213	BPT102093	27091	63275	MCA102161	39152	75336	STM104137
15030	51214	BPT102097	27092	63276	MCA102164	39153	75337	STM104138
15031	51215	BPT102100	27093	63277	MCA102165	39154	75338	STM104139
15032	51216	BPT102102	27094	63278	MCA102170	39155	75339	STM104147
15033	51217	BPT102103	27095	63279	MCA102171	39156	75340	STM104153
15034	51218	BPT102115	27096	63280	MCA102180	39157	75341	STM104155
15035	51219	BPT102118	27097	63281	MCA102208	39158	75342	STM104156
15036	51220	BPT102123	27098	63282	MCA102216	39159	75343	STM104158
15037	51221	BPT102136	27099	63283	MCA102218	39160	75344	STM104159
15038	51222	BPT102142	27100	63284	MCA102219	39161	75345	STM104165
15039	51223	BPT102145	27101	63285	MCA102220	39162	75346	STM104197
15040	51224	BPT102162	27102	63286	MCA102246	39163	75347	STM104200
15041	51225	BPT102166	27103	63287	MCA102257	39164	75348	STM104214
15042	51226	BPT102181	27104	63288	MCA102268	39165	75349	STM104218
15043	51227	BPT102188	27105	63289	MCA102273	39166	75350	STM104228
15044	51228	BPT102193	27106	63290	MCA102285	39167	75351	STM104238
15045	51229	BPT102211	27107	63291	MCA102320	39168	75352	STM104272
15046	51230	BPT102213	27108	63292	MCA102321	39169	75353	STM104274
15047	51231	BPT102214	27109	63293	MCA102322	39170	75354	STM104294
15048	51232	BPT102215	27110	63294	MCA102336	39171	75355	STM104297
15049	51233	BPT102222	27111	63295	MCA102344	39172	75356	STM104306
15050	51234	BPT102223	27112	63296	MCA102350	39173	75357	STM104307
15051	51235	BPT102230	27113	63297	MCA102353	39174	75358	STM104320
15052	51236	BPT102239	27114	63298	MCA102378	39175	75359	STM104325
15053	51237	BPT102256	27115	63299	MCA102416	39176	75360	STM104343
15054	51238	BPT102265	27116	63300	MCA102435	39177	75361	STM104345
15055	51239	BPT102269	27117	63301	MCA102436	39178	75362	STM104352
15056	51240	BPT102270	27118	63302	MCA102445	39179	75363	STM104358
15057	51241	BPT102294	27119	63303	MCA102471	39180	75364	STM104443
15058	51242	BPT102297	27120	63304	MCA102484	39181	75365	STM104445
15059	51243	BPT102300	27121	63305	MCA102486	39182	75366	STM104529
15060	51244	BPT102310	27122	63306	MCA102664	39183	75367	STM104546
15061	51245	BPT102315	27123	63307	MCA102703	39184	75368	STM104609
15062	51246	BPT102318	27124	63308	MCA102709	39185	75369	STM104752
15063	51247	BPT102322	27125	63309	MCA102746	39186	75370	STM104793
15064	51248	BPT102324	27126	63310	MCA102758	39187	75371	STM104876
15065	51249	BPT102335	27127	63311	MCA102759	39188	75372	STM105235

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15066	51250	BPT102346	27128	63312	MCA102793	39189	75373	STM106756
15067	51251	BPT102350	27129	63313	MCA102816	39190	75374	STM106921
15068	51252	BPT102354	27130	63314	MCA102830	39191	75375	STM107215
15069	51253	BPT102361	27131	63315	MCA102831	39192	75376	STY100087
15070	51254	BPT102363	27132	63316	MCA102847	39193	75377	STY100108
15071	51255	BPT102384	27133	63317	MCA102858	39194	75378	STY100327
15072	51256	BPT102386	27134	63318	MCA102862	39195	75379	STY100328
15073	51257	BPT102398	27135	63319	MCA102864	39196	75380	STY100333
15074	51258	BPT102402	27136	63320	MCA102901	39197	75381	STY100337
15075	51259	BPT102404	27137	63321	MCA102911	39198	75382	STY100339
15076	51260	BPT102405	27138	63322	MCA102916	39199	75383	STY100345
15077	51261	BPT102408	27139	63323	MCA102941	39200	75384	STY100347
15078	51262	BPT102422	27140	63324	MCA102956	39201	75385	STY100354
15079	51263	BPT102423	27141	63325	MCA102959	39202	75386	STY100355
15080	51264	BPT102427	27142	63326	MCA102969	39203	75387	STY100357
15081	51265	BPT102433	27143	63327	MCA102972	39204	75388	STY100358
15082	51266	BPT102439	27144	63328	MCA102985	39205	75389	STY100361
15083	51267	BPT102450	27145	63329	MCA103022	39206	75390	STY100363
15084	51268	BPT102451	27146	63330	MCA103023	39207	75391	STY100365
15085	51269	BPT102468	27147	63331	MCA103036	39208	75392	STY100368
15086	51270	BPT102469	27148	63332	MCA103062	39209	75393	STY100371
15087	51271	BPT102470	27149	63333	MCA103068	39210	75394	STY100375
15088	51272	BPT102473	27150	63334	MCA103082	39211	75395	STY100378
15089	51273	BPT102476	27151	63335	MCA103090	39212	75396	STY100380
15090	51274	BPT102482	27152	63336	MCA103094	39213	75397	STY100383
15091	51275	BPT102486	27153	63337	MCA103113	39214	75398	STY100387
15092	51276	BPT102489	27154	63338	MCA103114	39215	75399	STY100388
15093	51277	BPT102493	27155	63339	MCA103117	39216	75400	STY100389
15094	51278	BPT102499	27156	63340	MCA103128	39217	75401	STY100390
15095	51279	BPT102505	27157	63341	MCA103134	39218	75402	STY100393
15096	51280	BPT102507	27158	63342	MCA103135	39219	75403	STY100394
15097	51281	BPT102508	27159	63343	MCA103136	39220	75404	STY100399
15098	51282	BPT102509	27160	63344	MCA103138	39221	75405	STY100404
15099	51283	BPT102519	27161	63345	MCA103142	39222	75406	STY100405
15100	51284	BPT102527	27162	63346	MCA103158	39223	75407	STY100406
15101	51285	BPT102537	27163	63347	MCA103163	39224	75408	STY100410
15102	51286	BPT102546	27164	63348	MCA103171	39225	75409	STY100416
15103	51287	BPT102555	27165	63349	MCA103178	39226	75410	STY100420
15104	51288	BPT102556	27166	63350	MCA103188	39227	75411	STY100423
15105	51289	BPT102557	27167	63351	MCA103209	39228	75412	STY100425
15106	51290	BPT102559	27168	63352	MCA103218	39229	75413	STY100427
15107	51291	BPT102560	27169	63353	MCA103235	39230	75414	STY100428
15108	51292	BPT102594	27170	63354	MCA103261	39231	75415	STY100430
15109	51293	BPT102602	27171	63355	MCA103333	39232	75416	STY100431
15110	51294	BPT102603	27172	63356	MCA103356	39233	75417	STY100437
15111	51295	BPT102612	27173	63357	MCA103372	39234	75418	STY100439
15112	51296	BPT102614	27174	63358	MCA103400	39235	75419	STY100442
15113	51297	BPT102616	27175	63359	MCA103444	39236	75420	STY100443
15114	51298	BPT102618	27176	63360	MCA103453	39237	75421	STY100457
15115	51299	BPT102619	27177	63361	MCA103455	39238	75422	STY100460
15116	51300	BPT102620	27178	63362	MCA103469	39239	75423	STY100490
15117	51301	BPT102621	27179	63363	MCA103470	39240	75424	STY100497
15118	51302	BPT102625	27180	63364	MCA103517	39241	75425	STY100502
15119	51303	BPT102628	27181	63365	MCA103521	39242	75426	STY100510
15120	51304	BPT102642	27182	63366	MCA103523	39243	75427	STY100513

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15121	51305	BPT102643	27183	63367	MCA103535	39244	75428	STY100522
15122	51306	BPT102644	27184	63368	MCA103545	39245	75429	STY100523
15123	51307	BPT102646	27185	63369	MCA103553	39246	75430	STY100524
15124	51308	BPT102654	27186	63370	MCA103555	39247	75431	STY100529
15125	51309	BPT102655	27187	63371	MCA103569	39248	75432	STY100540
15126	51310	BPT102656	27188	63372	MCA103570	39249	75433	STY100542
15127	51311	BPT102657	27189	63373	MCA103579	39250	75434	STY100543
15128	51312	BPT102660	27190	63374	MCA103596	39251	75435	STY100553
15129	51313	BPT102669	27191	63375	MCA103599	39252	75436	STY100562
15130	51314	BPT102675	27192	63376	MCA103602	39253	75437	STY100570
15131	51315	BPT102676	27193	63377	MCA103610	39254	75438	STY100576
15132	51316	BPT102677	27194	63378	MCA103619	39255	75439	STY100579
15133	51317	BPT102678	27195	63379	MCA103645	39256	75440	STY100589
15134	51318	BPT102680	27196	63380	MCA103646	39257	75441	STY100591
15135	51319	BPT102694	27197	63381	MCA103652	39258	75442	STY100593
15136	51320	BPT102710	27198	63382	MCA103664	39259	75443	STY100603
15137	51321	BPT102713	27199	63383	MCA103671	39260	75444	STY100604
15138	51322	BPT102715	27200	63384	MCA103672	39261	75445	STY100607
15139	51323	BPT102716	27201	63385	MCA103674	39262	75446	STY100617
15140	51324	BPT102719	27202	63386	MCA103679	39263	75447	STY100618
15141	51325	BPT102724	27203	63387	MCA103682	39264	75448	STY100620
15142	51326	BPT102727	27204	63388	MCA103689	39265	75449	STY100625
15143	51327	BPT102735	27205	63389	MCA103692	39266	75450	STY100630
15144	51328	BPT102737	27206	63390	MCA103693	39267	75451	STY100639
15145	51329	BPT102742	27207	63391	MCA103694	39268	75452	STY100644
15146	51330	BPT102745	27208	63392	MCA103696	39269	75453	STY100694
15147	51331	BPT102754	27209	63393	MCA103697	39270	75454	STY100698
15148	51332	BPT102772	27210	63394	MGE100001	39271	75455	STY100699
15149	51333	BPT102774	27211	63395	MGE100003	39272	75456	STY100702
15150	51334	BPT102787	27212	63396	MGE100004	39273	75457	STY100712
15151	51335	BPT102803	27213	63397	MGE100005	39274	75458	STY100713
15152	51336	BPT102810	27214	63398	MGE100006	39275	75459	STY100718
15153	51337	BPT102814	27215	63399	MGE100008	39276	75460	STY100720
15154	51338	BPT102825	27216	63400	MGE100009	39277	75461	STY100721
15155	51339	BPT102828	27217	63401	MGE100015	39278	75462	STY100725
15156	51340	BPT102831	27218	63402	MGE100021	39279	75463	STY100726
15157	51341	BPT102833	27219	63403	MGE100023	39280	75464	STY100727
15158	51342	BPT102835	27220	63404	MGE100024	39281	75465	STY100734
15159	51343	BPT102841	27221	63405	MGE100030	39282	75466	STY100736
15160	51344	BPT102842	27222	63406	MGE100031	39283	75467	STY100745
15161	51345	BPT102843	27223	63407	MGE100033	39284	75468	STY100750
15162	51346	BPT102858	27224	63408	MGE100034	39285	75469	STY100765
15163	51347	BPT102861	27225	63409	MGE100035	39286	75470	STY100767
15164	51348	BPT102869	27226	63410	MGE100036	39287	75471	STY100768
15165	51349	BPT102882	27227	63411	MGE100038	39288	75472	STY100773
15166	51350	BPT102886	27228	63412	MGE100041	39289	75473	STY100775
15167	51351	BPT102887	27229	63413	MGE100046	39290	75474	STY100781
15168	51352	BPT102898	27230	63414	MGE100047	39291	75475	STY100783
15169	51353	BPT102903	27231	63415	MGE100048	39292	75476	STY100785
15170	51354	BPT102905	27232	63416	MGE100050	39293	75477	STY100789
15171	51355	BPT102914	27233	63417	MGE100051	39294	75478	STY100790
15172	51356	BPT102917	27234	63418	MGE100053	39295	75479	STY100794
15173	51357	BPT102919	27235	63419	MGE100054	39296	75480	STY100795
15174	51358	BPT102923	27236	63420	MGE100058	39297	75481	STY100798
15175	51359	BPT102936	27237	63421	MGE100059	39298	75482	STY100801

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15176	51360	BPT102938	27238	63422	MGE100060	39299	75483	STY100803
15177	51361	BPT102941	27239	63423	MGE100061	39300	75484	STY100804
15178	51362	BPT102959	27240	63424	MGE100062	39301	75485	STY100806
15179	51363	BPT102964	27241	63425	MGE100064	39302	75486	STY100808
15180	51364	BPT102974	27242	63426	MGE100065	39303	75487	STY100812
15181	51365	BPT102975	27243	63427	MGE100066	39304	75488	STY100814
15182	51366	BPT102979	27244	63428	MGE100067	39305	75489	STY100818
15183	51367	BPT102981	27245	63429	MGE100068	39306	75490	STY100819
15184	51368	BPT102984	27246	63430	MGE100071	39307	75491	STY100820
15185	51369	BPT102987	27247	63431	MGE100072	39308	75492	STY100822
15186	51370	BPT102988	27248	63432	MGE100073	39309	75493	STY100833
15187	51371	BPT102993	27249	63433	MGE100074	39310	75494	STY100836
15188	51372	BPT102997	27250	63434	MGE100081	39311	75495	STY100839
15189	51373	BPT102999	27251	63435	MGE100083	39312	75496	STY100840
15190	51374	BPT103001	27252	63436	MGE100084	39313	75497	STY100841
15191	51375	BPT103003	27253	63437	MGE100086	39314	75498	STY100842
15192	51376	BPT103005	27254	63438	MGE100087	39315	75499	STY100845
15193	51377	BPT103007	27255	63439	MGE100089	39316	75500	STY100846
15194	51378	BPT103008	27256	63440	MGE100090	39317	75501	STY100851
15195	51379	BPT103014	27257	63441	MGE100091	39318	75502	STY100853
15196	51380	BPT103017	27258	63442	MGE100092	39319	75503	STY100856
15197	51381	BPT103018	27259	63443	MGE100093	39320	75504	STY100858
15198	51382	BPT103019	27260	63444	MGE100094	39321	75505	STY100864
15199	51383	BPT103032	27261	63445	MGE100095	39322	75506	STY100866
15200	51384	BPT103035	27262	63446	MGE100096	39323	75507	STY100867
15201	51385	BPT103036	27263	63447	MGE100101	39324	75508	STY100868
15202	51386	BPT103038	27264	63448	MGE100102	39325	75509	STY100869
15203	51387	BPT103049	27265	63449	MGE100105	39326	75510	STY100870
15204	51388	BPT103051	27266	63450	MGE100111	39327	75511	STY100871
15205	51389	BPT103061	27267	63451	MGE100113	39328	75512	STY100879
15206	51390	BPT103076	27268	63452	MGE100115	39329	75513	STY100880
15207	51391	BPT103090	27269	63453	MGE100116	39330	75514	STY100886
15208	51392	BPT103127	27270	63454	MGE100123	39331	75515	STY100889
15209	51393	BPT103130	27271	63455	MGE100124	39332	75516	STY100910
15210	51394	BPT103136	27272	63456	MGE100128	39333	75517	STY100921
15211	51395	BPT103139	27273	63457	MGE100130	39334	75518	STY100924
15212	51396	BPT103140	27274	63458	MGE100132	39335	75519	STY100931
15213	51397	BPT103142	27275	63459	MGE100136	39336	75520	STY100932
15214	51398	BPT103145	27276	63460	MGE100138	39337	75521	STY100935
15215	51399	BPT103146	27277	63461	MGE100139	39338	75522	STY100942
15216	51400	BPT103152	27278	63462	MGE100141	39339	75523	STY100943
15217	51401	BPT103178	27279	63463	MGE100143	39340	75524	STY100944
15218	51402	BPT103217	27280	63464	MGE100144	39341	75525	STY100949
15219	51403	BPT103246	27281	63465	MGE100147	39342	75526	STY100960
15220	51404	BPT103254	27282	63466	MGE100148	39343	75527	STY100962
15221	51405	BPT103416	27283	63467	MGE100151	39344	75528	STY100977
15222	51406	BPT103478	27284	63468	MGE100153	39345	75529	STY100979
15223	51407	BPT103484	27285	63469	MGE100154	39346	75530	STY100981
15224	51408	BPT103682	27286	63470	MGE100155	39347	75531	STY100983
15225	51409	BPT103683	27287	63471	MGE100156	39348	75532	STY100984
15226	51410	BPT103695	27288	63472	MGE100157	39349	75533	STY100985
15227	51411	BPT103701	27289	63473	MGE100158	39350	75534	STY100986
15228	51412	BPT103725	27290	63474	MGE100159	39351	75535	STY100988
15229	51413	BPT103765	27291	63475	MGE100160	39352	75536	STY100992
15230	51414	BPT103790	27292	63476	MGE100161	39353	75537	STY100994

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15231	51415	BPT103857	27293	63477	MGE100162	39354	75538	STY100997
15232	51416	BPT103974	27294	63478	MGE100163	39355	75539	STY100998
15233	51417	BPT103989	27295	63479	MGE100164	39356	75540	STY101003
15234	51418	BPT104008	27296	63480	MGE100165	39357	75541	STY101011
15235	51419	BPT104019	27297	63481	MGE100166	39358	75542	STY101017
15236	51420	BPT104043	27298	63482	MGE100167	39359	75543	STY101019
15237	51421	BPT104047	27299	63483	MGE100168	39360	75544	STY101028
15238	51422	BPT104048	27300	63484	MGE100169	39361	75545	STY101051
15239	51423	BPT104052	27301	63485	MGE100170	39362	75546	STY101052
15240	51424	BPT104060	27302	63486	MGE100171	39363	75547	STY101059
15241	51425	BPT104063	27303	63487	MGE100172	39364	75548	STY101068
15242	51426	BPT104067	27304	63488	MGE100173	39365	75549	STY101070
15243	51427	BPT104094	27305	63489	MGE100174	39366	75550	STY101071
15244	51428	BPT104100	27306	63490	MGE100176	39367	75551	STY101074
15245	51429	BPT104115	27307	63491	MGE100177	39368	75552	STY101075
15246	51430	BPT104160	27308	63492	MGE100178	39369	75553	STY101077
15247	51431	BPT104171	27309	63493	MGE100179	39370	75554	STY101078
15248	51432	BPT104317	27310	63494	MGE100180	39371	75555	STY101082
15249	51433	BPT104331	27311	63495	MGE100181	39372	75556	STY101087
15250	51434	BPT104383	27312	63496	MGE100182	39373	75557	STY101095
15251	51435	BPT104423	27313	63497	MGE100183	39374	75558	STY101099
15252	51436	BPT104464	27314	63498	MGE100184	39375	75559	STY101100
15253	51437	BPT104469	27315	63499	MGE100185	39376	75560	STY101101
15254	51438	BPT104503	27316	63500	MGE100195	39377	75561	STY101103
15255	51439	BPT104512	27317	63501	MGE100196	39378	75562	STY101110
15256	51440	BPT104523	27318	63502	MGE100197	39379	75563	STY101114
15257	51441	BPT104540	27319	63503	MGE100198	39380	75564	STY101116
15258	51442	BPT104544	27320	63504	MGE100199	39381	75565	STY101117
15259	51443	BPT104548	27321	63505	MGE100200	39382	75566	STY101118
15260	51444	BPT104549	27322	63506	MGE100205	39383	75567	STY101126
15261	51445	BPT104633	27323	63507	MGE100206	39384	75568	STY101127
15262	51446	BPT104642	27324	63508	MGE100215	39385	75569	STY101128
15263	51447	BPT104646	27325	63509	MGE100216	39386	75570	STY101129
15264	51448	BPT104649	27326	63510	MGE100217	39387	75571	STY101132
15265	51449	BPT104652	27327	63511	MGE100219	39388	75572	STY101134
15266	51450	BPT104658	27328	63512	MGE100220	39389	75573	STY101139
15267	51451	BPT104697	27329	63513	MGE100222	39390	75574	STY101143
15268	51452	BPT104731	27330	63514	MGE100226	39391	75575	STY101151
15269	51453	BPT104764	27331	63515	MGE100227	39392	75576	STY101155
15270	51454	BPT104802	27332	63516	MGE100229	39393	75577	STY101157
15271	51455	BPT104814	27333	63517	MGE100231	39394	75578	STY101161
15272	51456	BPT104834	27334	63518	MGE100232	39395	75579	STY101163
15273	51457	BPT105047	27335	63519	MGE100233	39396	75580	STY101168
15274	51458	BPT105117	27336	63520	MGE100234	39397	75581	STY101178
15275	51459	BPT105268	27337	63521	MGE100235	39398	75582	STY101179
15276	51460	BPT105307	27338	63522	MGE100236	39399	75583	STY101185
15277	51461	BPT105316	27339	63523	MGE100237	39400	75584	STY101186
15278	51462	BPT105323	27340	63524	MGE100238	39401	75585	STY101188
15279	51463	BPT105409	27341	63525	MGE100239	39402	75586	STY101194
15280	51464	BPT105606	27342	63526	MGE100240	39403	75587	STY101195
15281	51465	BPT105636	27343	63527	MGE100244	39404	75588	STY101200
15282	51466	BPT105648	27344	63528	MGE100245	39405	75589	STY101202
15283	51467	BPT105662	27345	63529	MGE100248	39406	75590	STY101206
15284	51468	BPT105733	27346	63530	MGE100249	39407	75591	STY101217
15285	51469	BPT105757	27347	63531	MGE100250	39408	75592	STY101223

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15286	51470	BPT105763	27348	63532	MGE100251	39409	75593	STY101224
15287	51471	BPT105773	27349	63533	MGE100253	39410	75594	STY101241
15288	51472	BPT105804	27350	63534	MGE100254	39411	75595	STY101244
15289	51473	BPT105849	27351	63535	MGE100255	39412	75596	STY101256
15290	51474	BPT105862	27352	63536	MGE100257	39413	75597	STY101259
15291	51475	BPT105896	27353	63537	MGE100258	39414	75598	STY101261
15292	51476	BPT105932	27354	63538	MGE100262	39415	75599	STY101269
15293	51477	BPT105939	27355	63539	MGE100263	39416	75600	STY101273
15294	51478	BPT105948	27356	63540	MGE100266	39417	75601	STY101281
15295	51479	BPT106030	27357	63541	MGE100267	39418	75602	STY101284
15296	51480	BPT106501	27358	63542	MGE100268	39419	75603	STY101288
15297	51481	BPT106864	27359	63543	MGE100271	39420	75604	STY101289
15298	51482	BPT106954	27360	63544	MGE100272	39421	75605	STY101290
15299	51483	CAC100010	27361	63545	MGE100277	39422	75606	STY101296
15300	51484	CAC100013	27362	63546	MGE100278	39423	75607	STY101297
15301	51485	CAC100015	27363	63547	MGE100279	39424	75608	STY101301
15302	51486	CAC100045	27364	63548	MGE100280	39425	75609	STY101345
15303	51487	CAC100048	27365	63549	MGE100284	39426	75610	STY101350
15304	51488	CAC100049	27366	63550	MGE100286	39427	75611	STY101355
15305	51489	CAC100050	27367	63551	MGE100289	39428	75612	STY101358
15306	51490	CAC100060	27368	63552	MGE100293	39429	75613	STY101363
15307	51491	CAC100065	27369	63553	MGE100298	39430	75614	STY101364
15308	51492	CAC100067	27370	63554	MGE100299	39431	75615	STY101367
15309	51493	CAC100074	27371	63555	MGE100300	39432	75616	STY101369
15310	51494	CAC100088	27372	63556	MGE100301	39433	75617	STY101372
15311	51495	CAC100096	27373	63557	MGE100303	39434	75618	STY101374
15312	51496	CAC100098	27374	63558	MGE100304	39435	75619	STY101380
15313	51497	CAC100105	27375	63559	MGE100305	39436	75620	STY101381
15314	51498	CAC100107	27376	63560	MGE100306	39437	75621	STY101382
15315	51499	CAC100112	27377	63561	MGE100307	39438	75622	STY101386
15316	51500	CAC100114	27378	63562	MGE100311	39439	75623	STY101387
15317	51501	CAC100116	27379	63563	MGE100317	39440	75624	STY101394
15318	51502	CAC100128	27380	63564	MGE100318	39441	75625	STY101396
15319	51503	CAC100135	27381	63565	MGE100319	39442	75626	STY101408
15320	51504	CAC100146	27382	63566	MGE100322	39443	75627	STY101409
15321	51505	CAC100153	27383	63567	MGE100323	39444	75628	STY101418
15322	51506	CAC100156	27384	63568	MGE100328	39445	75629	STY101423
15323	51507	CAC100165	27385	63569	MGE100333	39446	75630	STY101426
15324	51508	CAC100166	27386	63570	MGE100335	39447	75631	STY101427
15325	51509	CAC100169	27387	63571	MGE100337	39448	75632	STY101440
15326	51510	CAC100183	27388	63572	MGE100338	39449	75633	STY101449
15327	51511	CAC100186	27389	63573	MGE100341	39450	75634	STY101450
15328	51512	CAC100193	27390	63574	MGE100346	39451	75635	STY101451
15329	51513	CAC100205	27391	63575	MGE100347	39452	75636	STY101458
15330	51514	CAC100215	27392	63576	MGE100348	39453	75637	STY101466
15331	51515	CAC100229	27393	63577	MGE100349	39454	75638	STY101470
15332	51516	CAC100242	27394	63578	MGE100350	39455	75639	STY101471
15333	51517	CAC100251	27395	63579	MGE100354	39456	75640	STY101473
15334	51518	CAC100257	27396	63580	MGE100355	39457	75641	STY101474
15335	51519	CAC100263	27397	63581	MGE100365	39458	75642	STY101478
15336	51520	CAC100274	27398	63582	MGE100366	39459	75643	STY101479
15337	51521	CAC100277	27399	63583	MGE100371	39460	75644	STY101480
15338	51522	CAC100279	27400	63584	MGE100372	39461	75645	STY101484
15339	51523	CAC100280	27401	63585	MGE100374	39462	75646	STY101485
15340	51524	CAC100288	27402	63586	MGE100386	39463	75647	STY101487

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15341	51525	CAC100302	27403	63587	MGE100389	39464	75648	STY101488
15342	51526	CAC100312	27404	63588	MGE100390	39465	75649	STY101489
15343	51527	CAC100315	27405	63589	MGE100391	39466	75650	STY101491
15344	51528	CAC100319	27406	63590	MGE100394	39467	75651	STY101514
15345	51529	CAC100322	27407	63591	MGE100395	39468	75652	STY101515
15346	51530	CAC100326	27408	63592	MGE100396	39469	75653	STY101521
15347	51531	CAC100327	27409	63593	MGE100398	39470	75654	STY101531
15348	51532	CAC100329	27410	63594	MGE100403	39471	75655	STY101535
15349	51533	CAC100342	27411	63595	MGE100404	39472	75656	STY101536
15350	51534	CAC100345	27412	63596	MGE100406	39473	75657	STY101540
15351	51535	CAC100348	27413	63597	MGE100408	39474	75658	STY101557
15352	51536	CAC100355	27414	63598	MGE100413	39475	75659	STY101559
15353	51537	CAC100359	27415	63599	MGE100414	39476	75660	STY101560
15354	51538	CAC100360	27416	63600	MGE100415	39477	75661	STY101562
15355	51539	CAC100371	27417	63601	MGE100417	39478	75662	STY101563
15356	51540	CAC100377	27418	63602	MGE100419	39479	75663	STY101569
15357	51541	CAC100380	27419	63603	MGE100422	39480	75664	STY101570
15358	51542	CAC100384	27420	63604	MGE100427	39481	75665	STY101572
15359	51543	CAC100397	27421	63605	MGE100428	39482	75666	STY101591
15360	51544	CAC100402	27422	63606	MGE100429	39483	75667	STY101609
15361	51545	CAC100404	27423	63607	MGE100430	39484	75668	STY101614
15362	51546	CAC100405	27424	63608	MGE100431	39485	75669	STY101629
15363	51547	CAC100416	27425	63609	MGE100434	39486	75670	STY101647
15364	51548	CAC100425	27426	63610	MGE100435	39487	75671	STY101649
15365	51549	CAC100433	27427	63611	MGE100436	39488	75672	STY101650
15366	51550	CAC100444	27428	63612	MGE100439	39489	75673	STY101654
15367	51551	CAC100454	27429	63613	MGE100443	39490	75674	STY101655
15368	51552	CAC100456	27430	63614	MGE100444	39491	75675	STY101658
15369	51553	CAC100464	27431	63615	MGE100445	39492	75676	STY101659
15370	51554	CAC100467	27432	63616	MGE100446	39493	75677	STY101661
15371	51555	CAC100474	27433	63617	MGE100451	39494	75678	STY101662
15372	51556	CAC100475	27434	63618	MGE100453	39495	75679	STY101664
15373	51557	CAC100478	27435	63619	MGE100454	39496	75680	STY101665
15374	51558	CAC100479	27436	63620	MGE100455	39497	75681	STY101669
15375	51559	CAC100492	27437	63621	MGE100458	39498	75682	STY101671
15376	51560	CAC100495	27438	63622	MGE100460	39499	75683	STY101673
15377	51561	CAC100499	27439	63623	MGE100462	39500	75684	STY101680
15378	51562	CAC100500	27440	63624	MGE100464	39501	75685	STY101683
15379	51563	CAC100509	27441	63625	MGE100466	39502	75686	STY101686
15380	51564	CAC100510	27442	63626	MGE100468	39503	75687	STY101689
15381	51565	CAC100511	27443	63627	MGE100471	39504	75688	STY101715
15382	51566	CAC100524	27444	63628	MGE100472	39505	75689	STY101717
15383	51567	CAC100526	27445	63629	MGE100473	39506	75690	STY101721
15384	51568	CAC100528	27446	63630	MGE100474	39507	75691	STY101723
15385	51569	CAC100532	27447	63631	MGE100475	39508	75692	STY101724
15386	51570	CAC100548	27448	63632	MGE100479	39509	75693	STY101725
15387	51571	CAC100550	27449	63633	MGE100480	39510	75694	STY101738
15388	51572	CAC100551	27450	63634	MLP100001	39511	75695	STY101740
15389	51573	CAC100555	27451	63635	MLP100002	39512	75696	STY101751
15390	51574	CAC100566	27452	63636	MLP100005	39513	75697	STY101753
15391	51575	CAC100570	27453	63637	MLP100006	39514	75698	STY101754
15392	51576	CAC100574	27454	63638	MLP100014	39515	75699	STY101758
15393	51577	CAC100576	27455	63639	MLP100028	39516	75700	STY101764
15394	51578	CAC100588	27456	63640	MLP100033	39517	75701	STY101770
15395	51579	CAC100593	27457	63641	MLP100042	39518	75702	STY101779

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15396	51580	CAC100597	27458	63642	MLP100043	39519	75703	STY101780
15397	51581	CAC100601	27459	63643	MLP100054	39520	75704	STY101781
15398	51582	CAC100612	27460	63644	MLP100058	39521	75705	STY101782
15399	51583	CAC100614	27461	63645	MLP100059	39522	75706	STY101785
15400	51584	CAC100618	27462	63646	MLP100060	39523	75707	STY101786
15401	51585	CAC100619	27463	63647	MLP100062	39524	75708	STY101787
15402	51586	CAC100624	27464	63648	MLP100064	39525	75709	STY101788
15403	51587	CAC100626	27465	63649	MLP100072	39526	75710	STY101789
15404	51588	CAC100640	27466	63650	MLP100082	39527	75711	STY101792
15405	51589	CAC100649	27467	63651	MLP100086	39528	75712	STY101796
15406	51590	CAC100650	27468	63652	MLP100098	39529	75713	STY101797
15407	51591	CAC100655	27469	63653	MLP100101	39530	75714	STY101798
15408	51592	CAC100661	27470	63654	MLP100102	39531	75715	STY101800
15409	51593	CAC100686	27471	63655	MLP100103	39532	75716	STY101801
15410	51594	CAC100688	27472	63656	MLP100108	39533	75717	STY101802
15411	51595	CAC100692	27473	63657	MLP100111	39534	75718	STY101803
15412	51596	CAC100694	27474	63658	MLP100112	39535	75719	STY101804
15413	51597	CAC100700	27475	63659	MLP100114	39536	75720	STY101805
15414	51598	CAC100704	27476	63660	MLP100125	39537	75721	STY101806
15415	51599	CAC100708	27477	63661	MLP100128	39538	75722	STY101807
15416	51600	CAC100711	27478	63662	MLP100129	39539	75723	STY101808
15417	51601	CAC100714	27479	63663	MLP100130	39540	75724	STY101809
15418	51602	CAC100718	27480	63664	MLP100137	39541	75725	STY101812
15419	51603	CAC100722	27481	63665	MLP100140	39542	75726	STY101817
15420	51604	CAC100732	27482	63666	MLP100143	39543	75727	STY101819
15421	51605	CAC100740	27483	63667	MLP100145	39544	75728	STY101820
15422	51606	CAC100742	27484	63668	MLP100149	39545	75729	STY101821
15423	51607	CAC100746	27485	63669	MLP100150	39546	75730	STY101822
15424	51608	CAC100774	27486	63670	MLP100154	39547	75731	STY101823
15425	51609	CAC100782	27487	63671	MLP100156	39548	75732	STY101824
15426	51610	CAC100786	27488	63672	MLP100158	39549	75733	STY101825
15427	51611	CAC100789	27489	63673	MLP100165	39550	75734	STY101826
15428	51612	CAC100796	27490	63674	MLP100167	39551	75735	STY101827
15429	51613	CAC100805	27491	63675	MLP100169	39552	75736	STY101828
15430	51614	CAC100809	27492	63676	MLP100170	39553	75737	STY101829
15431	51615	CAC100810	27493	63677	MLP100172	39554	75738	STY101830
15432	51616	CAC100829	27494	63678	MLP100176	39555	75739	STY101831
15433	51617	CAC100830	27495	63679	MLP100179	39556	75740	STY101832
15434	51618	CAC100838	27496	63680	MLP100180	39557	75741	STY101833
15435	51619	CAC100848	27497	63681	MLP100181	39558	75742	STY101840
15436	51620	CAC100852	27498	63682	MLP100182	39559	75743	STY101844
15437	51621	CAC100854	27499	63683	MLP100193	39560	75744	STY101845
15438	51622	CAC100867	27500	63684	MLP100198	39561	75745	STY101854
15439	51623	CAC100870	27501	63685	MLP100208	39562	75746	STY101855
15440	51624	CAC100871	27502	63686	MLP100217	39563	75747	STY101858
15441	51625	CAC100874	27503	63687	MLP100220	39564	75748	STY101862
15442	51626	CAC100879	27504	63688	MLP100221	39565	75749	STY101872
15443	51627	CAC100885	27505	63689	MLP100222	39566	75750	STY101873
15444	51628	CAC100895	27506	63690	MLP100225	39567	75751	STY101874
15445	51629	CAC100901	27507	63691	MLP100232	39568	75752	STY101883
15446	51630	CAC100902	27508	63692	MLP100233	39569	75753	STY101885
15447	51631	CAC100905	27509	63693	MLP100234	39570	75754	STY101886
15448	51632	CAC100906	27510	63694	MLP100237	39571	75755	STY101888
15449	51633	CAC100913	27511	63695	MLP100239	39572	75756	STY101893
15450	51634	CAC100916	27512	63696	MLP100243	39573	75757	STY101896

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15451	51635	CAC100920	27513	63697	MLP100255	39574	75758	STY101906
15452	51636	CAC100927	27514	63698	MLP100257	39575	75759	STY101910
15453	51637	CAC100929	27515	63699	MLP100258	39576	75760	STY101915
15454	51638	CAC100931	27516	63700	MLP100263	39577	75761	STY101918
15455	51639	CAC100933	27517	63701	MLP100266	39578	75762	STY101923
15456	51640	CAC100937	27518	63702	MLP100276	39579	75763	STY101924
15457	51641	CAC100946	27519	63703	MLP100282	39580	75764	STY101925
15458	51642	CAC100955	27520	63704	MLP100283	39581	75765	STY101930
15459	51643	CAC100960	27521	63705	MLP100291	39582	75766	STY101933
15460	51644	CAC100962	27522	63706	MLP100302	39583	75767	STY101934
15461	51645	CAC100965	27523	63707	MLP100305	39584	75768	STY101940
15462	51646	CAC100970	27524	63708	MLP100306	39585	75769	STY101943
15463	51647	CAC100973	27525	63709	MLP100308	39586	75770	STY101946
15464	51648	CAC100976	27526	63710	MLP100309	39587	75771	STY101949
15465	51649	CAC100985	27527	63711	MLP100310	39588	75772	STY101950
15466	51650	CAC100986	27528	63712	MLP100312	39589	75773	STY101953
15467	51651	CAC100997	27529	63713	MLP100313	39590	75774	STY101969
15468	51652	CAC101008	27530	63714	MLP100320	39591	75775	STY101985
15469	51653	CAC101019	27531	63715	MLP100325	39592	75776	STY101987
15470	51654	CAC101025	27532	63716	MLP100326	39593	75777	STY101995
15471	51655	CAC101034	27533	63717	MLP100327	39594	75778	STY102000
15472	51656	CAC101036	27534	63718	MLP100335	39595	75779	STY102006
15473	51657	CAC101038	27535	63719	MLP100341	39596	75780	STY102007
15474	51658	CAC101040	27536	63720	MLP100344	39597	75781	STY102009
15475	51659	CAC101045	27537	63721	MLP100345	39598	75782	STY102011
15476	51660	CAC101046	27538	63722	MLP100346	39599	75783	STY102015
15477	51661	CAC101054	27539	63723	MLP100349	39600	75784	STY102026
15478	51662	CAC101058	27540	63724	MLP100350	39601	75785	STY102029
15479	51663	CAC101062	27541	63725	MLP100351	39602	75786	STY102031
15480	51664	CAC101065	27542	63726	MLP100354	39603	75787	STY102033
15481	51665	CAC101067	27543	63727	MLP100355	39604	75788	STY102040
15482	51666	CAC101070	27544	63728	MLP100363	39605	75789	STY102046
15483	51667	CAC101071	27545	63729	MLP100365	39606	75790	STY102055
15484	51668	CAC101072	27546	63730	MLP100366	39607	75791	STY102061
15485	51669	CAC101077	27547	63731	MLP100370	39608	75792	STY102064
15486	51670	CAC101079	27548	63732	MLP100376	39609	75793	STY102068
15487	51671	CAC101080	27549	63733	MLP100378	39610	75794	STY102069
15488	51672	CAC101085	27550	63734	MLP100381	39611	75795	STY102070
15489	51673	CAC101086	27551	63735	MLP100391	39612	75796	STY102079
15490	51674	CAC101092	27552	63736	MLP100395	39613	75797	STY102082
15491	51675	CAC101093	27553	63737	MLP100397	39614	75798	STY102085
15492	51676	CAC101096	27554	63738	MLP100403	39615	75799	STY102095
15493	51677	CAC101106	27555	63739	MLP100413	39616	75800	STY102097
15494	51678	CAC101114	27556	63740	MLP100416	39617	75801	STY102099
15495	51679	CAC101129	27557	63741	MLP100424	39618	75802	STY102100
15496	51680	CAC101131	27558	63742	MLP100428	39619	75803	STY102102
15497	51681	CAC101137	27559	63743	MLP100433	39620	75804	STY102109
15498	51682	CAC101140	27560	63744	MLP100439	39621	75805	STY102110
15499	51683	CAC101142	27561	63745	MLP100441	39622	75806	STY102114
15500	51684	CAC101145	27562	63746	MLP100443	39623	75807	STY102115
15501	51685	CAC101148	27563	63747	MLP100452	39624	75808	STY102126
15502	51686	CAC101149	27564	63748	MLP100459	39625	75809	STY102141
15503	51687	CAC101153	27565	63749	MLP100466	39626	75810	STY102144
15504	51688	CAC101158	27566	63750	MLP100468	39627	75811	STY102149
15505	51689	CAC101176	27567	63751	MLP100469	39628	75812	STY102189

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15506	51690	CAC101178	27568	63752	MLP100475	39629	75813	STY102208
15507	51691	CAC101199	27569	63753	MLP100477	39630	75814	STY102215
15508	51692	CAC101201	27570	63754	MLP100485	39631	75815	STY102217
15509	51693	CAC101211	27571	63755	MLP100490	39632	75816	STY102219
15510	51694	CAC101220	27572	63756	MLP100495	39633	75817	STY102221
15511	51695	CAC101222	27573	63757	MLP100498	39634	75818	STY102223
15512	51696	CAC101231	27574	63758	MLP100499	39635	75819	STY102227
15513	51697	CAC101250	27575	63759	MLP100500	39636	75820	STY102233
15514	51698	CAC101256	27576	63760	MLP100501	39637	75821	STY102242
15515	51699	CAC101275	27577	63761	MLP100504	39638	75822	STY102250
15516	51700	CAC101277	27578	63762	MLP100505	39639	75823	STY102252
15517	51701	CAC101280	27579	63763	MLP100509	39640	75824	STY102254
15518	51702	CAC101282	27580	63764	MLP100512	39641	75825	STY102261
15519	51703	CAC101300	27581	63765	MLP100513	39642	75826	STY102265
15520	51704	CAC101312	27582	63766	MLP100514	39643	75827	STY102266
15521	51705	CAC101314	27583	63767	MLP100515	39644	75828	STY102270
15522	51706	CAC101326	27584	63768	MLP100516	39645	75829	STY102276
15523	51707	CAC101327	27585	63769	MLP100518	39646	75830	STY102277
15524	51708	CAC101333	27586	63770	MLP100520	39647	75831	STY102291
15525	51709	CAC101334	27587	63771	MLP100521	39648	75832	STY102294
15526	51710	CAC101335	27588	63772	MLP100524	39649	75833	STY102299
15527	51711	CAC101338	27589	63773	MLP100525	39650	75834	STY102310
15528	51712	CAC101341	27590	63774	MLP100526	39651	75835	STY102312
15529	51713	CAC101350	27591	63775	MLP100531	39652	75836	STY102313
15530	51714	CAC101362	27592	63776	MLP100532	39653	75837	STY102319
15531	51715	CAC101364	27593	63777	MLP100533	39654	75838	STY102320
15532	51716	CAC101368	27594	63778	MLP100541	39655	75839	STY102326
15533	51717	CAC101393	27595	63779	MLP100543	39656	75840	STY102330
15534	51718	CAC101396	27596	63780	MLP100560	39657	75841	STY102331
15535	51719	CAC101411	27597	63781	MLP100561	39658	75842	STY102345
15536	51720	CAC101416	27598	63782	MLP100563	39659	75843	STY102346
15537	51721	CAC101420	27599	63783	MLP100564	39660	75844	STY102347
15538	51722	CAC101421	27600	63784	MLP100565	39661	75845	STY102351
15539	51723	CAC101425	27601	63785	MLP100566	39662	75846	STY102368
15540	51724	CAC101443	27602	63786	MLP100567	39663	75847	STY102372
15541	51725	CAC101446	27603	63787	MLP100568	39664	75848	STY102373
15542	51726	CAC101449	27604	63788	MLP100569	39665	75849	STY102374
15543	51727	CAC101453	27605	63789	MLP100570	39666	75850	STY102376
15544	51728	CAC101457	27606	63790	MLP100571	39667	75851	STY102377
15545	51729	CAC101459	27607	63791	MLP100572	39668	75852	STY102383
15546	51730	CAC101460	27608	63792	MLP100574	39669	75853	STY102386
15547	51731	CAC101472	27609	63793	MLP100575	39670	75854	STY102390
15548	51732	CAC101480	27610	63794	MLP100590	39671	75855	STY102394
15549	51733	CAC101486	27611	63795	MLP100598	39672	75856	STY102396
15550	51734	CAC101493	27612	63796	MLP100600	39673	75857	STY102397
15551	51735	CAC101497	27613	63797	MLP100604	39674	75858	STY102402
15552	51736	CAC101508	27614	63798	MLP100627	39675	75859	STY102403
15553	51737	CAC101509	27615	63799	MLP100628	39676	75860	STY102408
15554	51738	CAC101518	27616	63800	MLP100652	39677	75861	STY102410
15555	51739	CAC101521	27617	63801	MLP100663	39678	75862	STY102412
15556	51740	CAC101527	27618	63802	MLP100673	39679	75863	STY102416
15557	51741	CAC101529	27619	63803	MLP100674	39680	75864	STY102418
15558	51742	CAC101532	27620	63804	MLP100687	39681	75865	STY102434
15559	51743	CAC101539	27621	63805	MLP100688	39682	75866	STY102437
15560	51744	CAC101540	27622	63806	MLP100689	39683	75867	STY102442

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15561	51745	CAC101546	27623	63807	MLP100690	39684	75868	STY102451
15562	51746	CAC101555	27624	63808	MLP100693	39685	75869	STY102457
15563	51747	CAC101556	27625	63809	MLP100697	39686	75870	STY102475
15564	51748	CAC101559	27626	63810	MLP100698	39687	75871	STY102478
15565	51749	CAC101564	27627	63811	MLP100699	39688	75872	STY102479
15566	51750	CAC101568	27628	63812	MLP100700	39689	75873	STY102480
15567	51751	CAC101569	27629	63813	MLP100701	39690	75874	STY102481
15568	51752	CAC101588	27630	63814	MLP100703	39691	75875	STY102485
15569	51753	CAC101590	27631	63815	MLP100705	39692	75876	STY102486
15570	51754	CAC101593	27632	63816	MLP100706	39693	75877	STY102488
15571	51755	CAC101596	27633	63817	MLP100708	39694	75878	STY102489
15572	51756	CAC101598	27634	63818	MLP100709	39695	75879	STY102490
15573	51757	CAC101599	27635	63819	MLP100716	39696	75880	STY102492
15574	51758	CAC101602	27636	63820	MLP100717	39697	75881	STY102495
15575	51759	CAC101620	27637	63821	MLP100720	39698	75882	STY102502
15576	51760	CAC101625	27638	63822	MLP100726	39699	75883	STY102505
15577	51761	CAC101627	27639	63823	MLP100729	39700	75884	STY102506
15578	51762	CAC101653	27640	63824	MLP100731	39701	75885	STY102512
15579	51763	CAC101654	27641	63825	MLP100741	39702	75886	STY102526
15580	51764	CAC101664	27642	63826	MLP100743	39703	75887	STY102530
15581	51765	CAC101675	27643	63827	MLP100747	39704	75888	STY102531
15582	51766	CAC101685	27644	63828	MLP100752	39705	75889	STY102532
15583	51767	CAC101689	27645	63829	MLP100753	39706	75890	STY102533
15584	51768	CAC101692	27646	63830	MLP100755	39707	75891	STY102534
15585	51769	CAC101693	27647	63831	MLP100758	39708	75892	STY102536
15586	51770	CAC101710	27648	63832	MLP100773	39709	75893	STY102538
15587	51771	CAC101713	27649	63833	MLP100774	39710	75894	STY102545
15588	51772	CAC101716	27650	63834	MLP100775	39711	75895	STY102547
15589	51773	CAC101718	27651	63835	MLP100788	39712	75896	STY102549
15590	51774	CAC101721	27652	63836	MLP100789	39713	75897	STY102551
15591	51775	CAC101724	27653	63837	MLP100794	39714	75898	STY102552
15592	51776	CAC101727	27654	63838	MLP100812	39715	75899	STY102553
15593	51777	CAC101737	27655	63839	MLP100814	39716	75900	STY102558
15594	51778	CAC101738	27656	63840	MLP100822	39717	75901	STY102563
15595	51779	CAC101744	27657	63841	MLP100829	39718	75902	STY102565
15596	51780	CAC101752	27658	63842	MLP100838	39719	75903	STY102567
15597	51781	CAC101756	27659	63843	MLP100841	39720	75904	STY102569
15598	51782	CAC101769	27660	63844	MLP100845	39721	75905	STY102589
15599	51783	CAC101772	27661	63845	MLP100846	39722	75906	STY102590
15600	51784	CAC101778	27662	63846	MLP100850	39723	75907	STY102601
15601	51785	CAC101781	27663	63847	MLP100851	39724	75908	STY102604
15602	51786	CAC101783	27664	63848	MLP100852	39725	75909	STY102615
15603	51787	CAC101785	27665	63849	MLP100854	39726	75910	STY102620
15604	51788	CAC101789	27666	63850	MLP100855	39727	75911	STY102647
15605	51789	CAC101790	27667	63851	MLP100860	39728	75912	STY102650
15606	51790	CAC101791	27668	63852	MLP100862	39729	75913	STY102652
15607	51791	CAC101792	27669	63853	MLP100864	39730	75914	STY102666
15608	51792	CAC101793	27670	63854	MLP100865	39731	75915	STY102668
15609	51793	CAC101794	27671	63855	MLP100866	39732	75916	STY102671
15610	51794	CAC101795	27672	63856	MLP100867	39733	75917	STY102673
15611	51795	CAC101801	27673	63857	MLP100869	39734	75918	STY102674
15612	51796	CAC101804	27674	63858	MLP100870	39735	75919	STY102677
15613	51797	CAC101805	27675	63859	MLP100874	39736	75920	STY102679
15614	51798	CAC101806	27676	63860	MLP100875	39737	75921	STY102680
15615	51799	CAC101811	27677	63861	MLP100878	39738	75922	STY102681

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15616	51800	CAC101812	27678	63862	MLP100887	39739	75923	STY102683
15617	51801	CAC101816	27679	63863	MLP100891	39740	75924	STY102684
15618	51802	CAC101820	27680	63864	MLP100899	39741	75925	STY102685
15619	51803	CAC101825	27681	63865	MLP100902	39742	75926	STY102686
15620	51804	CAC101837	27682	63866	MLP100903	39743	75927	STY102689
15621	51805	CAC101838	27683	63867	MLP100904	39744	75928	STY102690
15622	51806	CAC101842	27684	63868	MLP100905	39745	75929	STY102699
15623	51807	CAC101843	27685	63869	MLP100909	39746	75930	STY102701
15624	51808	CAC101849	27686	63870	MLP100910	39747	75931	STY102715
15625	51809	CAC101851	27687	63871	MLP100915	39748	75932	STY102718
15626	51810	CAC101855	27688	63872	MLP100917	39749	75933	STY102722
15627	51811	CAC101857	27689	63873	MLP100918	39750	75934	STY102724
15628	51812	CAC101858	27690	63874	MLP100924	39751	75935	STY102732
15629	51813	CAC101861	27691	63875	MLP100931	39752	75936	STY102734
15630	51814	CAC101863	27692	63876	MLP100935	39753	75937	STY102735
15631	51815	CAC101867	27693	63877	MLP100936	39754	75938	STY102739
15632	51816	CAC101872	27694	63878	MLP100948	39755	75939	STY102740
15633	51817	CAC101874	27695	63879	MLP100951	39756	75940	STY102753
15634	51818	CAC101879	27696	63880	MLP100953	39757	75941	STY102761
15635	51819	CAC101882	27697	63881	MLP100955	39758	75942	STY102762
15636	51820	CAC101883	27698	63882	MLP100958	39759	75943	STY102763
15637	51821	CAC101884	27699	63883	MLP100964	39760	75944	STY102765
15638	51822	CAC101894	27700	63884	MLP100968	39761	75945	STY102766
15639	51823	CAC101902	27701	63885	MLP100969	39762	75946	STY102769
15640	51824	CAC101913	27702	63886	MLP100970	39763	75947	STY102770
15641	51825	CAC101932	27703	63887	MLP100972	39764	75948	STY102772
15642	51826	CAC101940	27704	63888	MLP100973	39765	75949	STY102777
15643	51827	CAC101941	27705	63889	MLP100982	39766	75950	STY102788
15644	51828	CAC101944	27706	63890	MLP100983	39767	75951	STY102790
15645	51829	CAC101945	27707	63891	MLP100984	39768	75952	STY102811
15646	51830	CAC101951	27708	63892	MLP100985	39769	75953	STY102828
15647	51831	CAC101960	27709	63893	MLP100986	39770	75954	STY102830
15648	51832	CAC101973	27710	63894	MLP100987	39771	75955	STY102834
15649	51833	CAC101976	27711	63895	MLP100988	39772	75956	STY102835
15650	51834	CAC101982	27712	63896	MLP100989	39773	75957	STY102854
15651	51835	CAC101983	27713	63897	MLP100990	39774	75958	STY102855
15652	51836	CAC101984	27714	63898	MLP100992	39775	75959	STY102862
15653	51837	CAC101989	27715	63899	MLP100993	39776	75960	STY102871
15654	51838	CAC101990	27716	63900	MLP100995	39777	75961	STY102872
15655	51839	CAC101995	27717	63901	MLP100998	39778	75962	STY102874
15656	51840	CAC101999	27718	63902	MLP101005	39779	75963	STY102875
15657	51841	CAC102006	27719	63903	MLP101007	39780	75964	STY102886
15658	51842	CAC102008	27720	63904	MLP101008	39781	75965	STY102893
15659	51843	CAC102009	27721	63905	MLP101010	39782	75966	STY102895
15660	51844	CAC102015	27722	63906	MLP101011	39783	75967	STY102896
15661	51845	CAC102016	27723	63907	MLP101019	39784	75968	STY102898
15662	51846	CAC102021	27724	63908	MLP101022	39785	75969	STY102906
15663	51847	CAC102025	27725	63909	MLP101024	39786	75970	STY102912
15664	51848	CAC102031	27726	63910	MLP101025	39787	75971	STY102913
15665	51849	CAC102032	27727	63911	MLP101029	39788	75972	STY102916
15666	51850	CAC102036	27728	63912	MLP101031	39789	75973	STY102938
15667	51851	CAC102051	27729	63913	MLP101032	39790	75974	STY102941
15668	51852	CAC102057	27730	63914	MLP101033	39791	75975	STY102950
15669	51853	CAC102068	27731	63915	MLP101036	39792	75976	STY102957
15670	51854	CAC102082	27732	63916	MLP101037	39793	75977	STY102963

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15671	51855	CAC102097	27733	63917	MLP101038	39794	75978	STY102981
15672	51856	CAC102107	27734	63918	MLP101041	39795	75979	STY102987
15673	51857	CAC102108	27735	63919	MLP101042	39796	75980	STY102989
15674	51858	CAC102114	27736	63920	MLP101043	39797	75981	STY102995
15675	51859	CAC102120	27737	63921	MLP101044	39798	75982	STY102996
15676	51860	CAC102127	27738	63922	MLP101046	39799	75983	STY103006
15677	51861	CAC102136	27739	63923	MLP101048	39800	75984	STY103008
15678	51862	CAC102137	27740	63924	MLP101056	39801	75985	STY103013
15679	51863	CAC102140	27741	63925	MLP101057	39802	75986	STY103014
15680	51864	CAC102141	27742	63926	MLP101061	39803	75987	STY103017
15681	51865	CAC102146	27743	63927	MLP101062	39804	75988	STY103023
15682	51866	CAC102148	27744	63928	MLP101064	39805	75989	STY103024
15683	51867	CAC102152	27745	63929	MLP101065	39806	75990	STY103025
15684	51868	CAC102154	27746	63930	MLP101067	39807	75991	STY103028
15685	51869	CAC102155	27747	63931	MLP101068	39808	75992	STY103030
15686	51870	CAC102158	27748	63932	MLP101071	39809	75993	STY103032
15687	51871	CAC102162	27749	63933	MLP101075	39810	75994	STY103035
15688	51872	CAC102164	27750	63934	MLP101083	39811	75995	STY103053
15689	51873	CAC102168	27751	63935	MLP101093	39812	75996	STY103062
15690	51874	CAC102177	27752	63936	MLP101099	39813	75997	STY103069
15691	51875	CAC102180	27753	63937	MLP101100	39814	75998	STY103071
15692	51876	CAC102184	27754	63938	MLP101111	39815	75999	STY103073
15693	51877	CAC102186	27755	63939	MLP101114	39816	76000	STY103075
15694	51878	CAC102187	27756	63940	MLP101115	39817	76001	STY103077
15695	51879	CAC102201	27757	63941	MLP101118	39818	76002	STY103100
15696	51880	CAC102203	27758	63942	MLP101119	39819	76003	STY103105
15697	51881	CAC102209	27759	63943	MLP101120	39820	76004	STY103120
15698	51882	CAC102210	27760	63944	MLP101121	39821	76005	STY103129
15699	51883	CAC102213	27761	63945	MLP101122	39822	76006	STY103131
15700	51884	CAC102217	27762	63946	MLP101123	39823	76007	STY103133
15701	51885	CAC102218	27763	63947	MLP101124	39824	76008	STY103139
15702	51886	CAC102220	27764	63948	MLP101125	39825	76009	STY103145
15703	51887	CAC102226	27765	63949	MLP101126	39826	76010	STY103147
15704	51888	CAC102232	27766	63950	MLP101127	39827	76011	STY103148
15705	51889	CAC102242	27767	63951	MLP101128	39828	76012	STY103157
15706	51890	CAC102249	27768	63952	MLP101129	39829	76013	STY103163
15707	51891	CAC102256	27769	63953	MLP101130	39830	76014	STY103166
15708	51892	CAC102258	27770	63954	MLP101131	39831	76015	STY103167
15709	51893	CAC102263	27771	63955	MLP101132	39832	76016	STY103171
15710	51894	CAC102265	27772	63956	MLP101133	39833	76017	STY103172
15711	51895	CAC102273	27773	63957	MLP101134	39834	76018	STY103173
15712	51896	CAC102280	27774	63958	MLP101135	39835	76019	STY103174
15713	51897	CAC102283	27775	63959	MLP101136	39836	76020	STY103175
15714	51898	CAC102285	27776	63960	MLP101137	39837	76021	STY103176
15715	51899	CAC102293	27777	63961	MLP101138	39838	76022	STY103177
15716	51900	CAC102294	27778	63962	MLP101139	39839	76023	STY103179
15717	51901	CAC102305	27779	63963	MLP101140	39840	76024	STY103182
15718	51902	CAC102306	27780	63964	MLP101141	39841	76025	STY103207
15719	51903	CAC102314	27781	63965	MLP101142	39842	76026	STY103209
15720	51904	CAC102325	27782	63966	MLP101143	39843	76027	STY103211
15721	51905	CAC102328	27783	63967	MLP101144	39844	76028	STY103212
15722	51906	CAC102331	27784	63968	MLP101145	39845	76029	STY103214
15723	51907	CAC102333	27785	63969	MLP101147	39846	76030	STY103216
15724	51908	CAC102336	27786	63970	MLP101148	39847	76031	STY103217
15725	51909	CAC102338	27787	63971	MLP101153	39848	76032	STY103218

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15726	51910	CAC102345	27788	63972	MLP101154	39849	76033	STY103224
15727	51911	CAC102355	27789	63973	MLP101155	39850	76034	STY103227
15728	51912	CAC102361	27790	63974	MLP101156	39851	76035	STY103237
15729	51913	CAC102362	27791	63975	MLP101160	39852	76036	STY103261
15730	51914	CAC102363	27792	63976	MLP101168	39853	76037	STY103268
15731	51915	CAC102376	27793	63977	MLP101176	39854	76038	STY103271
15732	51916	CAC102377	27794	63978	MLP101180	39855	76039	STY103273
15733	51917	CAC102383	27795	63979	MLP101184	39856	76040	STY103282
15734	51918	CAC102388	27796	63980	MLP101190	39857	76041	STY103289
15735	51919	CAC102393	27797	63981	MLP101193	39858	76042	STY103294
15736	51920	CAC102398	27798	63982	MLP101194	39859	76043	STY103295
15737	51921	CAC102412	27799	63983	MLP101195	39860	76044	STY103296
15738	51922	CAC102417	27800	63984	MLP101196	39861	76045	STY103298
15739	51923	CAC102421	27801	63985	MLP101197	39862	76046	STY103303
15740	51924	CAC102428	27802	63986	MLP101198	39863	76047	STY103321
15741	51925	CAC102432	27803	63987	MLP101199	39864	76048	STY103324
15742	51926	CAC102434	27804	63988	MLP101209	39865	76049	STY103325
15743	51927	CAC102446	27805	63989	MLP101210	39866	76050	STY103328
15744	51928	CAC102451	27806	63990	MLP101222	39867	76051	STY103329
15745	51929	CAC102460	27807	63991	MLP101237	39868	76052	STY103330
15746	51930	CAC102467	27808	63992	MLP101240	39869	76053	STY103352
15747	51931	CAC102468	27809	63993	MLP101243	39870	76054	STY103378
15748	51932	CAC102470	27810	63994	MLP101249	39871	76055	STY103388
15749	51933	CAC102483	27811	63995	MLP101253	39872	76056	STY103389
15750	51934	CAC102490	27812	63996	MLP101262	39873	76057	STY103394
15751	51935	CAC102492	27813	63997	MLP101266	39874	76058	STY103395
15752	51936	CAC102494	27814	63998	MLP101268	39875	76059	STY103413
15753	51937	CAC102504	27815	63999	MLP101277	39876	76060	STY103416
15754	51938	CAC102507	27816	64000	MLP101283	39877	76061	STY103418
15755	51939	CAC102519	27817	64001	MLP101294	39878	76062	STY103420
15756	51940	CAC102521	27818	64002	MLP101303	39879	76063	STY103424
15757	51941	CAC102528	27819	64003	MLP101304	39880	76064	STY103425
15758	51942	CAC102531	27820	64004	MLP101306	39881	76065	STY103427
15759	51943	CAC102538	27821	64005	MLP101322	39882	76066	STY103428
15760	51944	CAC102549	27822	64006	MLP101323	39883	76067	STY103432
15761	51945	CAC102551	27823	64007	MLP101330	39884	76068	STY103434
15762	51946	CAC102552	27824	64008	MLP101343	39885	76069	STY103443
15763	51947	CAC102554	27825	64009	MLP101352	39886	76070	STY103444
15764	51948	CAC102562	27826	64010	MLP101354	39887	76071	STY103453
15765	51949	CAC102576	27827	64011	MLP101355	39888	76072	STY103460
15766	51950	CAC102578	27828	64012	MLP101357	39889	76073	STY103461
15767	51951	CAC102581	27829	64013	MLP101364	39890	76074	STY103465
15768	51952	CAC102583	27830	64014	MLP101366	39891	76075	STY103467
15769	51953	CAC102599	27831	64015	MLP101376	39892	76076	STY103469
15770	51954	CAC102601	27832	64016	MLP101379	39893	76077	STY103470
15771	51955	CAC102604	27833	64017	MLP101382	39894	76078	STY103477
15772	51956	CAC102608	27834	64018	MLP101383	39895	76079	STY103490
15773	51957	CAC102610	27835	64019	MLP101385	39896	76080	STY103491
15774	51958	CAC102614	27836	64020	MLP101386	39897	76081	STY103497
15775	51959	CAC102616	27837	64021	MLP101387	39898	76082	STY103498
15776	51960	CAC102618	27838	64022	MLP101388	39899	76083	STY103502
15777	51961	CAC102619	27839	64023	MLP101393	39900	76084	STY103504
15778	51962	CAC102622	27840	64024	MLP101401	39901	76085	STY103505
15779	51963	CAC102623	27841	64025	MLP101416	39902	76086	STY103507
15780	51964	CAC102626	27842	64026	MLP101425	39903	76087	STY103508

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15781	51965	CAC102635	27843	64027	MLP101430	39904	76088	STY103509
15782	51966	CAC102639	27844	64028	MLP101432	39905	76089	STY103510
15783	51967	CAC102641	27845	64029	MLP101436	39906	76090	STY103512
15784	51968	CAC102647	27846	64030	MLP101437	39907	76091	STY103516
15785	51969	CAC102648	27847	64031	MLP101438	39908	76092	STY103518
15786	51970	CAC102661	27848	64032	MLP101439	39909	76093	STY103526
15787	51971	CAC102666	27849	64033	MLP101453	39910	76094	STY103547
15788	51972	CAC102670	27850	64034	MLP101458	39911	76095	STY103551
15789	51973	CAC102672	27851	64035	MLP101461	39912	76096	STY103559
15790	51974	CAC102675	27852	64036	MLP101467	39913	76097	STY103561
15791	51975	CAC102676	27853	64037	MLP101478	39914	76098	STY103566
15792	51976	CAC102682	27854	64038	MLP101480	39915	76099	STY103588
15793	51977	CAC102691	27855	64039	MLP101485	39916	76100	STY103600
15794	51978	CAC102695	27856	64040	MLP101488	39917	76101	STY103605
15795	51979	CAC102696	27857	64041	MLP101504	39918	76102	STY103612
15796	51980	CAC102703	27858	64042	MLP101512	39919	76103	STY103615
15797	51981	CAC102708	27859	64043	MLP101517	39920	76104	STY103627
15798	51982	CAC102710	27860	64044	MLP101520	39921	76105	STY103635
15799	51983	CAC102712	27861	64045	MLP101538	39922	76106	STY103641
15800	51984	CAC102718	27862	64046	MLP101539	39923	76107	STY103643
15801	51985	CAC102721	27863	64047	MLP101542	39924	76108	STY103649
15802	51986	CAC102729	27864	64048	MLP101543	39925	76109	STY103659
15803	51987	CAC102735	27865	64049	MLP101560	39926	76110	STY103674
15804	51988	CAC102744	27866	64050	MLP101567	39927	76111	STY103689
15805	51989	CAC102747	27867	64051	MLP101570	39928	76112	STY103692
15806	51990	CAC102748	27868	64052	MLP101575	39929	76113	STY103701
15807	51991	CAC102749	27869	64053	MLP101576	39930	76114	STY103732
15808	51992	CAC102751	27870	64054	MLP101580	39931	76115	STY103739
15809	51993	CAC102754	27871	64055	MLP101581	39932	76116	STY103745
15810	51994	CAC102757	27872	64056	MLP101582	39933	76117	STY103753
15811	51995	CAC102758	27873	64057	MLP101583	39934	76118	STY103754
15812	51996	CAC102762	27874	64058	MLP101584	39935	76119	STY103755
15813	51997	CAC102763	27875	64059	MLP101585	39936	76120	STY103756
15814	51998	CAC102765	27876	64060	MLP101587	39937	76121	STY103757
15815	51999	CAC102768	27877	64061	MLP101589	39938	76122	STY103762
15816	52000	CAC102771	27878	64062	MLP101592	39939	76123	STY103772
15817	52001	CAC102777	27879	64063	MLP101595	39940	76124	STY103774
15818	52002	CAC102778	27880	64064	MLP101597	39941	76125	STY103776
15819	52003	CAC102781	27881	64065	MLP101600	39942	76126	STY103787
15820	52004	CAC102784	27882	64066	MLP101601	39943	76127	STY103788
15821	52005	CAC102785	27883	64067	MLP101603	39944	76128	STY103792
15822	52006	CAC102789	27884	64068	MLP101604	39945	76129	STY103797
15823	52007	CAC102793	27885	64069	MLP101605	39946	76130	STY103805
15824	52008	CAC102804	27886	64070	MPN100010	39947	76131	STY103809
15825	52009	CAC102810	27887	64071	MPN100031	39948	76132	STY103811
15826	52010	CAC102817	27888	64072	MPN100032	39949	76133	STY103813
15827	52011	CAC102832	27889	64073	MPN100037	39950	76134	STY103815
15828	52012	CAC102855	27890	64074	MPN100038	39951	76135	STY103818
15829	52013	CAC102861	27891	64075	MPN100039	39952	76136	STY103820
15830	52014	CAC102862	27892	64076	MPN100048	39953	76137	STY103824
15831	52015	CAC102864	27893	64077	MPN100049	39954	76138	STY103825
15832	52016	CAC102868	27894	64078	MPN100067	39955	76139	STY103826
15833	52017	CAC102879	27895	64079	MPN100073	39956	76140	STY103840
15834	52018	CAC102880	27896	64080	MPN100074	39957	76141	STY103841
15835	52019	CAC102891	27897	64081	MPN100076	39958	76142	STY103844

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15836	52020	CAC102898	27898	64082	MPN100077	39959	76143	STY103845
15837	52021	CAC102900	27899	64083	MPN100080	39960	76144	STY103848
15838	52022	CAC102901	27900	64084	MPN100081	39961	76145	STY103850
15839	52023	CAC102906	27901	64085	MPN100082	39962	76146	STY103852
15840	52024	CAC102908	27902	64086	MPN100083	39963	76147	STY103853
15841	52025	CAC102909	27903	64087	MPN100084	39964	76148	STY103856
15842	52026	CAC102921	27904	64088	MPN100087	39965	76149	STY103858
15843	52027	CAC102924	27905	64089	MPN100088	39966	76150	STY103859
15844	52028	CAC102927	27906	64090	MPN100090	39967	76151	STY103862
15845	52029	CAC102930	27907	64091	MPN100091	39968	76152	STY103864
15846	52030	CAC102936	27908	64092	MPN100093	39969	76153	STY103870
15847	52031	CAC102940	27909	64093	MPN100094	39970	76154	STY103871
15848	52032	CAC102941	27910	64094	MPN100095	39971	76155	STY103872
15849	52033	CAC102945	27911	64095	MPN100096	39972	76156	STY103874
15850	52034	CAC102954	27912	64096	MPN100101	39973	76157	STY103875
15851	52035	CAC102955	27913	64097	MPN100104	39974	76158	STY103879
15852	52036	CAC102963	27914	64098	MPN100107	39975	76159	STY103886
15853	52037	CAC102966	27915	64099	MPN100108	39976	76160	STY103893
15854	52038	CAC102975	27916	64100	MPN100109	39977	76161	STY103896
15855	52039	CAC102979	27917	64101	MPN100110	39978	76162	STY103897
15856	52040	CAC102981	27918	64102	MPN100111	39979	76163	STY103901
15857	52041	CAC102986	27919	64103	MPN100120	39980	76164	STY103903
15858	52042	CAC102993	27920	64104	MPN100121	39981	76165	STY103908
15859	52043	CAC102995	27921	64105	MPN100128	39982	76166	STY103909
15860	52044	CAC103000	27922	64106	MPN100129	39983	76167	STY103910
15861	52045	CAC103001	27923	64107	MPN100131	39984	76168	STY103912
15862	52046	CAC103017	27924	64108	MPN100135	39985	76169	STY103913
15863	52047	CAC103020	27925	64109	MPN100138	39986	76170	STY103914
15864	52048	CAC103024	27926	64110	MPN100145	39987	76171	STY103916
15865	52049	CAC103028	27927	64111	MPN100146	39988	76172	STY103920
15866	52050	CAC103030	27928	64112	MPN100148	39989	76173	STY103924
15867	52051	CAC103049	27929	64113	MPN100149	39990	76174	STY103932
15868	52052	CAC103052	27930	64114	MPN100150	39991	76175	STY103935
15869	52053	CAC103064	27931	64115	MPN100151	39992	76176	STY103939
15870	52054	CAC103068	27932	64116	MPN100153	39993	76177	STY103943
15871	52055	CAC103083	27933	64117	MPN100154	39994	76178	STY103946
15872	52056	CAC103086	27934	64118	MPN100156	39995	76179	STY103948
15873	52057	CAC103089	27935	64119	MPN100160	39996	76180	STY103952
15874	52058	CAC103091	27936	64120	MPN100162	39997	76181	STY103962
15875	52059	CAC103092	27937	64121	MPN100163	39998	76182	STY103966
15876	52060	CAC103101	27938	64122	MPN100164	39999	76183	STY103967
15877	52061	CAC103102	27939	64123	MPN100169	40000	76184	STY103968
15878	52062	CAC103106	27940	64124	MPN100171	40001	76185	STY103971
15879	52063	CAC103109	27941	64125	MPN100173	40002	76186	STY103973
15880	52064	CAC103116	27942	64126	MPN100175	40003	76187	STY103975
15881	52065	CAC103117	27943	64127	MPN100177	40004	76188	STY103981
15882	52066	CAC103125	27944	64128	MPN100179	40005	76189	STY103986
15883	52067	CAC103126	27945	64129	MPN100182	40006	76190	STY103987
15884	52068	CAC103127	27946	64130	MPN100183	40007	76191	STY103988
15885	52069	CAC103133	27947	64131	MPN100184	40008	76192	STY103989
15886	52070	CAC103138	27948	64132	MPN100186	40009	76193	STY103990
15887	52071	CAC103146	27949	64133	MPN100189	40010	76194	STY103991
15888	52072	CAC103151	27950	64134	MPN100190	40011	76195	STY103993
15889	52073	CAC103154	27951	64135	MPN100205	40012	76196	STY103994
15890	52074	CAC103158	27952	64136	MPN100206	40013	76197	STY104006

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15891	52075	CAC103161	27953	64137	MPN100210	40014	76198	STY104009
15892	52076	CAC103163	27954	64138	MPN100211	40015	76199	STY104010
15893	52077	CAC103172	27955	64139	MPN100215	40016	76200	STY104012
15894	52078	CAC103175	27956	64140	MPN100218	40017	76201	STY104016
15895	52079	CAC103184	27957	64141	MPN100219	40018	76202	STY104020
15896	52080	CAC103197	27958	64142	MPN100220	40019	76203	STY104022
15897	52081	CAC103209	27959	64143	MPN100223	40020	76204	STY104029
15898	52082	CAC103216	27960	64144	MPN100224	40021	76205	STY104030
15899	52083	CAC103227	27961	64145	MPN100225	40022	76206	STY104040
15900	52084	CAC103232	27962	64146	MPN100226	40023	76207	STY104052
15901	52085	CAC103234	27963	64147	MPN100233	40024	76208	STY104055
15902	52086	CAC103237	27964	64148	MPN100236	40025	76209	STY104078
15903	52087	CAC103249	27965	64149	MPN100238	40026	76210	STY104079
15904	52088	CAC103250	27966	64150	MPN100240	40027	76211	STY104085
15905	52089	CAC103266	27967	64151	MPN100241	40028	76212	STY104093
15906	52090	CAC103270	27968	64152	MPN100242	40029	76213	STY104094
15907	52091	CAC103277	27969	64153	MPN100247	40030	76214	STY104095
15908	52092	CAC103282	27970	64154	MPN100256	40031	76215	STY104107
15909	52093	CAC103297	27971	64155	MPN100266	40032	76216	STY104108
15910	52094	CAC103299	27972	64156	MPN100269	40033	76217	STY104116
15911	52095	CAC103311	27973	64157	MPN100270	40034	76218	STY104122
15912	52096	CAC103316	27974	64158	MPN100274	40035	76219	STY104136
15913	52097	CAC103317	27975	64159	MPN100275	40036	76220	STY104137
15914	52098	CAC103323	27976	64160	MPN100278	40037	76221	STY104138
15915	52099	CAC103330	27977	64161	MPN100279	40038	76222	STY104139
15916	52100	CAC103333	27978	64162	MPN100280	40039	76223	STY104150
15917	52101	CAC103337	27979	64163	MPN100284	40040	76224	STY104152
15918	52102	CAC103354	27980	64164	MPN100285	40041	76225	STY104153
15919	52103	CAC103360	27981	64165	MPN100286	40042	76226	STY104154
15920	52104	CAC103368	27982	64166	MPN100289	40043	76227	STY104155
15921	52105	CAC103369	27983	64167	MPN100301	40044	76228	STY104157
15922	52106	CAC103376	27984	64168	MPN100303	40045	76229	STY104159
15923	52107	CAC103385	27985	64169	MPN100304	40046	76230	STY104162
15924	52108	CAC103410	27986	64170	MPN100311	40047	76231	STY104163
15925	52109	CAC103413	27987	64171	MPN100321	40048	76232	STY104168
15926	52110	CAC103418	27988	64172	MPN100322	40049	76233	STY104171
15927	52111	CAC103420	27989	64173	MPN100323	40050	76234	STY104172
15928	52112	CAC103422	27990	64174	MPN100326	40051	76235	STY104173
15929	52113	CAC103429	27991	64175	MPN100327	40052	76236	STY104175
15930	52114	CAC103441	27992	64176	MPN100346	40053	76237	STY104177
15931	52115	CAC103450	27993	64177	MPN100347	40054	76238	STY104182
15932	52116	CAC103453	27994	64178	MPN100348	40055	76239	STY104185
15933	52117	CAC103455	27995	64179	MPN100352	40056	76240	STY104186
15934	52118	CAC103461	27996	64180	MPN100354	40057	76241	STY104189
15935	52119	CAC103463	27997	64181	MPN100361	40058	76242	STY104191
15936	52120	CAC103481	27998	64182	MPN100365	40059	76243	STY104192
15937	52121	CAC103483	27999	64183	MPN100366	40060	76244	STY104199
15938	52122	CAC103488	28000	64184	MPN100367	40061	76245	STY104200
15939	52123	CAC103498	28001	64185	MPN100368	40062	76246	STY104204
15940	52124	CAC103499	28002	64186	MPN100370	40063	76247	STY104207
15941	52125	CAC103503	28003	64187	MPN100388	40064	76248	STY104209
15942	52126	CAC103515	28004	64188	MPN100395	40065	76249	STY104213
15943	52127	CAC103516	28005	64189	MPN100397	40066	76250	STY104221
15944	52128	CAC103521	28006	64190	MPN100407	40067	76251	STY104231
15945	52129	CAC103551	28007	64191	MPN100411	40068	76252	STY104235

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
15946	52130	CAC103552	28008	64192	MPN100412	40069	76253	STY104243
15947	52131	CAC103558	28009	64193	MPN100413	40070	76254	STY104246
15948	52132	CAC103561	28010	64194	MPN100414	40071	76255	STY104247
15949	52133	CAC103563	28011	64195	MPN100415	40072	76256	STY104257
15950	52134	CAC103566	28012	64196	MPN100416	40073	76257	STY104266
15951	52135	CAC103575	28013	64197	MPN100417	40074	76258	STY104272
15952	52136	CAC103585	28014	64198	MPN100419	40075	76259	STY104274
15953	52137	CAC103586	28015	64199	MPN100420	40076	76260	STY104276
15954	52138	CAC103600	28016	64200	MPN100421	40077	76261	STY104279
15955	52139	CAC103602	28017	64201	MPN100422	40078	76262	STY104286
15956	52140	CAC103604	28018	64202	MPN100427	40079	76263	STY104295
15957	52141	CAC103605	28019	64203	MPN100430	40080	76264	STY104298
15958	52142	CAC103617	28020	64204	MPN100432	40081	76265	STY104302
15959	52143	CAC103620	28021	64205	MPN100436	40082	76266	STY104305
15960	52144	CAC103630	28022	64206	MPN100441	40083	76267	STY104319
15961	52145	CAC103631	28023	64207	MPN100445	40084	76268	STY104329
15962	52146	CAC103641	28024	64208	MPN100446	40085	76269	STY104331
15963	52147	CAC103650	28025	64209	MPN100447	40086	76270	STY104333
15964	52148	CAC103652	28026	64210	MPN100448	40087	76271	STY104335
15965	52149	CAC103654	28027	64211	MPN100453	40088	76272	STY104336
15966	52150	CAC103664	28028	64212	MPN100457	40089	76273	STY104340
15967	52151	CAC103671	28029	64213	MPN100458	40090	76274	STY104341
15968	52152	CAC103674	28030	64214	MPN100459	40091	76275	STY104352
15969	52153	CAC103679	28031	64215	MPN100475	40092	76276	STY104356
15970	52154	CAC103684	28032	64216	MPN100476	40093	76277	STY104366
15971	52155	CAC103685	28033	64217	MPN100479	40094	76278	STY104382
15972	52156	CAC103687	28034	64218	MPN100480	40095	76279	STY104385
15973	52157	CAC103696	28035	64219	MPN100482	40096	76280	STY104391
15974	52158	CAC103704	28036	64220	MPN100483	40097	76281	STY104414
15975	52159	CAC103713	28037	64221	MPN100484	40098	76282	STY104415
15976	52160	CAC103721	28038	64222	MPN100486	40099	76283	STY104427
15977	52161	CAC103726	28039	64223	MPN100487	40100	76284	STY104430
15978	52162	CAC103735	28040	64224	MPN100488	40101	76285	STY104449
15979	52163	CAC103739	28041	64225	MPN100491	40102	76286	STY104453
15980	52164	CAC103745	28042	64226	MPN100494	40103	76287	STY104456
15981	52165	CAC103749	28043	64227	MPN100495	40104	76288	STY104457
15982	52166	CAC103752	28044	64228	MPN100496	40105	76289	STY104465
15983	52167	CAC103753	28045	64229	MPN100500	40106	76290	STY104469
15984	52168	CAC103762	28046	64230	MPN100502	40107	76291	STY104474
15985	52169	CAC103767	28047	64231	MPN100504	40108	76292	STY104481
15986	52170	CAC103770	28048	64232	MPN100508	40109	76293	STY104484
15987	52171	CAC103773	28049	64233	MPN100509	40110	76294	STY104486
15988	52172	CAC103778	28050	64234	MPN100510	40111	76295	STY104492
15989	52173	CBO100001	28051	64235	MPN100511	40112	76296	STY104499
15990	52174	CBO100008	28052	64236	MPN100512	40113	76297	STY104500
15991	52175	CBO100009	28053	64237	MPN100513	40114	76298	STY104521
15992	52176	CBO100018	28054	64238	MPN100514	40115	76299	STY104533
15993	52177	CBO100020	28055	64239	MPN100515	40116	76300	STY104535
15994	52178	CBO100026	28056	64240	MPN100516	40117	76301	STY104537
15995	52179	CBO100029	28057	64241	MPN100517	40118	76302	STY104539
15996	52180	CBO100058	28058	64242	MPN100519	40119	76303	STY104541
15997	52181	CBO100061	28059	64243	MPN100521	40120	76304	STY104543
15998	52182	CBO100064	28060	64244	MPN100522	40121	76305	STY104545
15999	52183	CBO100087	28061	64245	MPN100526	40122	76306	STY104553
16000	52184	CBO100089	28062	64246	MPN100528	40123	76307	STY104558

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16001	52185	CBO100098	28063	64247	MPN100529	40124	76308	STY104560
16002	52186	CBO100107	28064	64248	MPN100530	40125	76309	STY104563
16003	52187	CBO100117	28065	64249	MPN100533	40126	76310	STY104564
16004	52188	CBO100123	28066	64250	MPN100534	40127	76311	STY104565
16005	52189	CBO100125	28067	64251	MPN100537	40128	76312	STY104567
16006	52190	CBO100136	28068	64252	MPN100538	40129	76313	STY104568
16007	52191	CBO100139	28069	64253	MPN100554	40130	76314	STY104571
16008	52192	CBO100144	28070	64254	MPN100555	40131	76315	STY104574
16009	52193	CBO100146	28071	64255	MPN100557	40132	76316	STY104576
16010	52194	CBO100154	28072	64256	MPN100558	40133	76317	STY104578
16011	52195	CBO100159	28073	64257	MPN100560	40134	76318	STY104579
16012	52196	CBO100164	28074	64258	MPN100564	40135	76319	STY104582
16013	52197	CBO100172	28075	64259	MPN100566	40136	76320	STY104584
16014	52198	CBO100194	28076	64260	MPN100568	40137	76321	STY104591
16015	52199	CBO100196	28077	64261	MPN100572	40138	76322	STY104592
16016	52200	CBO100202	28078	64262	MPN100578	40139	76323	STY104593
16017	52201	CBO100209	28079	64263	MPN100579	40140	76324	STY104599
16018	52202	CBO100210	28080	64264	MPN100580	40141	76325	STY104601
16019	52203	CBO100211	28081	64265	MPN100582	40142	76326	STY104615
16020	52204	CBO100215	28082	64266	MPN100584	40143	76327	STY104620
16021	52205	CBO100216	28083	64267	MPN100590	40144	76328	STY104621
16022	52206	CBO100220	28084	64268	MPN100593	40145	76329	STY104626
16023	52207	CBO100230	28085	64269	MPN100594	40146	76330	STY104683
16024	52208	CBO100231	28086	64270	MPN100599	40147	76331	STY104781
16025	52209	CBO100238	28087	64271	MPN100600	40148	76332	STY104783
16026	52210	CBO100240	28088	64272	MPN100601	40149	76333	STY104800
16027	52211	CBO100245	28089	64273	MPN100602	40150	76334	STY104809
16028	52212	CBO100249	28090	64274	MPN100603	40151	76335	STY104820
16029	52213	CBO100250	28091	64275	MPN100604	40152	76336	STY104823
16030	52214	CBO100252	28092	64276	MPN100605	40153	76337	STY104877
16031	52215	CBO100253	28093	64277	MPN100606	40154	76338	STY104879
16032	52216	CBO100256	28094	64278	MPN100608	40155	76339	STY104903
16033	52217	CBO100266	28095	64279	MPN100609	40156	76340	STY104954
16034	52218	CBO100268	28096	64280	MPN100611	40157	76341	STY104986
16035	52219	CBO100272	28097	64281	MPN100612	40158	76342	STY105056
16036	52220	CBO100281	28098	64282	MPN100614	40159	76343	STY105066
16037	52221	CBO100286	28099	64283	MPN100621	40160	76344	STY105107
16038	52222	CBO100290	28100	64284	MPN100622	40161	76345	STY105122
16039	52223	CBO100292	28101	64285	MPN100623	40162	76346	STY105129
16040	52224	CBO100298	28102	64286	MPN100624	40163	76347	STY105166
16041	52225	CBO100306	28103	64287	MPN100626	40164	76348	STY105174
16042	52226	CBO100307	28104	64288	MPN100632	40165	76349	STY105178
16043	52227	CBO100308	28105	64289	MPN100635	40166	76350	STY105236
16044	52228	CBO100316	28106	64290	MPN100636	40167	76351	STY105423
16045	52229	CBO100320	28107	64291	MPN100637	40168	76352	STY105426
16046	52230	CBO100325	28108	64292	MPN100638	40169	76353	STY106198
16047	52231	CBO100338	28109	64293	MPN100639	40170	76354	STY106203
16048	52232	CBO100345	28110	64294	MPN100640	40171	76355	STY107110
16049	52233	CBO100347	28111	64295	MPN100641	40172	76356	STY107263
16050	52234	CBO100352	28112	64296	MPN100642	40173	76357	STY107265
16051	52235	CBO100356	28113	64297	MPN100643	40174	76358	STY107267
16052	52236	CBO100362	28114	64298	MPN100644	40175	76359	STY107465
16053	52237	CBO100372	28115	64299	MPN100646	40176	76360	STY107537
16054	52238	CBO100385	28116	64300	MPN100647	40177	76361	TPA100001
16055	52239	CBO100389	28117	64301	MPN100648	40178	76362	TPA100002

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16056	52240	CBO100390	28118	64302	MPN100649	40179	76363	TPA100005
16057	52241	CBO100410	28119	64303	MPN100650	40180	76364	TPA100014
16058	52242	CBO100411	28120	64304	MPN100651	40181	76365	TPA100015
16059	52243	CBO100412	28121	64305	MPN100652	40182	76366	TPA100019
16060	52244	CBO100413	28122	64306	MPN100653	40183	76367	TPA100024
16061	52245	CBO100415	28123	64307	MPN100654	40184	76368	TPA100028
16062	52246	CBO100417	28124	64308	MPN100655	40185	76369	TPA100029
16063	52247	CBO100419	28125	64309	MPN100656	40186	76370	TPA100041
16064	52248	CBO100432	28126	64310	MPN100657	40187	76371	TPA100043
16065	52249	CBO100440	28127	64311	MPN100658	40188	76372	TPA100050
16066	52250	CBO100441	28128	64312	MPN100659	40189	76373	TPA100051
16067	52251	CBO100447	28129	64313	MPN100660	40190	76374	TPA100052
16068	52252	CBO100452	28130	64314	MPN100661	40191	76375	TPA100055
16069	52253	CBO100463	28131	64315	MPN100662	40192	76376	TPA100056
16070	52254	CBO100465	28132	64316	MPN100663	40193	76377	TPA100057
16071	52255	CBO100467	28133	64317	MPN100664	40194	76378	TPA100059
16072	52256	CBO100474	28134	64318	MPN100665	40195	76379	TPA100060
16073	52257	CBO100481	28135	64319	MPN100666	40196	76380	TPA100061
16074	52258	CBO100493	28136	64320	MPN100667	40197	76381	TPA100062
16075	52259	CBO100497	28137	64321	MPN100672	40198	76382	TPA100066
16076	52260	CBO100509	28138	64322	MPN100673	40199	76383	TPA100070
16077	52261	CBO100517	28139	64323	MPN100676	40200	76384	TPA100076
16078	52262	CBO100532	28140	64324	MPN100677	40201	76385	TPA100078
16079	52263	CBO100552	28141	64325	MTU200001	40202	76386	TPA100084
16080	52264	CBO100561	28142	64326	MTU200002	40203	76387	TPA100089
16081	52265	CBO100573	28143	64327	MTU200005	40204	76388	TPA100090
16082	52266	CBO100586	28144	64328	MTU200006	40205	76389	TPA100093
16083	52267	CBO100592	28145	64329	MTU200014	40206	76390	TPA100095
16084	52268	CBO100594	28146	64330	MTU200032	40207	76391	TPA100096
16085	52269	CBO100600	28147	64331	MTU200037	40208	76392	TPA100098
16086	52270	CBO100607	28148	64332	MTU200041	40209	76393	TPA100101
16087	52271	CBO100608	28149	64333	MTU200045	40210	76394	TPA100102
16088	52272	CBO100610	28150	64334	MTU200050	40211	76395	TPA100103
16089	52273	CBO100615	28151	64335	MTU200053	40212	76396	TPA100104
16090	52274	CBO100620	28152	64336	MTU200054	40213	76397	TPA100106
16091	52275	CBO100623	28153	64337	MTU200055	40214	76398	TPA100107
16092	52276	CBO100627	28154	64338	MTU200056	40215	76399	TPA100112
16093	52277	CBO100630	28155	64339	MTU200058	40216	76400	TPA100118
16094	52278	CBO100633	28156	64340	MTU200069	40217	76401	TPA100123
16095	52279	CBO100636	28157	64341	MTU200070	40218	76402	TPA100139
16096	52280	CBO100644	28158	64342	MTU200091	40219	76403	TPA100140
16097	52281	CBO100656	28159	64343	MTU200101	40220	76404	TPA100143
16098	52282	CBO100670	28160	64344	MTU200111	40221	76405	TPA100147
16099	52283	CBO100671	28161	64345	MTU200117	40222	76406	TPA100154
16100	52284	CBO100672	28162	64346	MTU200123	40223	76407	TPA100158
16101	52285	CBO100682	28163	64347	MTU200124	40224	76408	TPA100168
16102	52286	CBO100684	28164	64348	MTU200155	40225	76409	TPA100176
16103	52287	CBO100701	28165	64349	MTU200164	40226	76410	TPA100177
16104	52288	CBO100702	28166	64350	MTU200182	40227	76411	TPA100182
16105	52289	CBO100717	28167	64351	MTU200185	40228	76412	TPA100183
16106	52290	CBO100718	28168	64352	MTU200188	40229	76413	TPA100185
16107	52291	CBO100728	28169	64353	MTU200189	40230	76414	TPA100186
16108	52292	CBO100732	28170	64354	MTU200190	40231	76415	TPA100187
16109	52293	CBO100733	28171	64355	MTU200217	40232	76416	TPA100188
16110	52294	CBO100735	28172	64356	MTU200229	40233	76417	TPA100189

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16111	52295	CBO100741	28173	64357	MTU200236	40234	76418	TPA100190
16112	52296	CBO100745	28174	64358	MTU200242	40235	76419	TPA100191
16113	52297	CBO100751	28175	64359	MTU200251	40236	76420	TPA100192
16114	52298	CBO100759	28176	64360	MTU200266	40237	76421	TPA100193
16115	52299	CBO100761	28177	64361	MTU200277	40238	76422	TPA100194
16116	52300	CBO100775	28178	64362	MTU200278	40239	76423	TPA100195
16117	52301	CBO100777	28179	64363	MTU200296	40240	76424	TPA100196
16118	52302	CBO100787	28180	64364	MTU200303	40241	76425	TPA100197
16119	52303	CBO100793	28181	64365	MTU200316	40242	76426	TPA100198
16120	52304	CBO100794	28182	64366	MTU200321	40243	76427	TPA100199
16121	52305	CBO100803	28183	64367	MTU200323	40244	76428	TPA100200
16122	52306	CBO100811	28184	64368	MTU200349	40245	76429	TPA100201
16123	52307	CBO100813	28185	64369	MTU200354	40246	76430	TPA100202
16124	52308	CBO100817	28186	64370	MTU200356	40247	76431	TPA100203
16125	52309	CBO100820	28187	64371	MTU200361	40248	76432	TPA100204
16126	52310	CBO100821	28188	64372	MTU200362	40249	76433	TPA100205
16127	52311	CBO100822	28189	64373	MTU200372	40250	76434	TPA100206
16128	52312	CBO100830	28190	64374	MTU200381	40251	76435	TPA100207
16129	52313	CBO100831	28191	64375	MTU200383	40252	76436	TPA100208
16130	52314	CBO100837	28192	64376	MTU200407	40253	76437	TPA100209
16131	52315	CBO100838	28193	64377	MTU200413	40254	76438	TPA100210
16132	52316	CBO100841	28194	64378	MTU200432	40255	76439	TPA100211
16133	52317	CBO100842	28195	64379	MTU200437	40256	76440	TPA100214
16134	52318	CBO100851	28196	64380	MTU200439	40257	76441	TPA100217
16135	52319	CBO100852	28197	64381	MTU200451	40258	76442	TPA100223
16136	52320	CBO100854	28198	64382	MTU200456	40259	76443	TPA100231
16137	52321	CBO100864	28199	64383	MTU200460	40260	76444	TPA100233
16138	52322	CBO100870	28200	64384	MTU200465	40261	76445	TPA100234
16139	52323	CBO100872	28201	64385	MTU200466	40262	76446	TPA100235
16140	52324	CBO100873	28202	64386	MTU200476	40263	76447	TPA100236
16141	52325	CBO100877	28203	64387	MTU200480	40264	76448	TPA100237
16142	52326	CBO100888	28204	64388	MTU200488	40265	76449	TPA100238
16143	52327	CBO100903	28205	64389	MTU200489	40266	76450	TPA100239
16144	52328	CBO100905	28206	64390	MTU200492	40267	76451	TPA100240
16145	52329	CBO100922	28207	64391	MTU200507	40268	76452	TPA100241
16146	52330	CBO100935	28208	64392	MTU200508	40269	76453	TPA100244
16147	52331	CBO100936	28209	64393	MTU200509	40270	76454	TPA100248
16148	52332	CBO100949	28210	64394	MTU200510	40271	76455	TPA100249
16149	52333	CBO100953	28211	64395	MTU200524	40272	76456	TPA100251
16150	52334	CBO100954	28212	64396	MTU200526	40273	76457	TPA100252
16151	52335	CBO100961	28213	64397	MTU200529	40274	76458	TPA100253
16152	52336	CBO100965	28214	64398	MTU200530	40275	76459	TPA100261
16153	52337	CBO100970	28215	64399	MTU200542	40276	76460	TPA100262
16154	52338	CBO100978	28216	64400	MTU200555	40277	76461	TPA100267
16155	52339	CBO100979	28217	64401	MTU200557	40278	76462	TPA100269
16156	52340	CBO100983	28218	64402	MTU200558	40279	76463	TPA100273
16157	52341	CBO100985	28219	64403	MTU200559	40280	76464	TPA100276
16158	52342	CBO100990	28220	64404	MTU200570	40281	76465	TPA100287
16159	52343	CBO100995	28221	64405	MTU200575	40282	76466	TPA100288
16160	52344	CBO100997	28222	64406	MTU200583	40283	76467	TPA100291
16161	52345	CBO100998	28223	64407	MTU200626	40284	76468	TPA100292
16162	52346	CBO101000	28224	64408	MTU200635	40285	76469	TPA100300
16163	52347	CBO101002	28225	64409	MTU200636	40286	76470	TPA100302
16164	52348	CBO101009	28226	64410	MTU200637	40287	76471	TPA100303
16165	52349	CBO101012	28227	64411	MTU200638	40288	76472	TPA100304

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16166	52350	CBO101019	28228	64412	MTU200648	40289	76473	TPA100324
16167	52351	CBO101026	28229	64413	MTU200649	40290	76474	TPA100325
16168	52352	CBO101028	28230	64414	MTU200664	40291	76475	TPA100327
16169	52353	CBO101029	28231	64415	MTU200665	40292	76476	TPA100330
16170	52354	CBO101031	28232	64416	MTU200667	40293	76477	TPA100333
16171	52355	CBO101032	28233	64417	MTU200671	40294	76478	TPA100337
16172	52356	CBO101036	28234	64418	MTU200679	40295	76479	TPA100340
16173	52357	CBO101041	28235	64419	MTU200680	40296	76480	TPA100341
16174	52358	CBO101042	28236	64420	MTU200681	40297	76481	TPA100346
16175	52359	CBO101057	28237	64421	MTU200682	40298	76482	TPA100350
16176	52360	CBO101061	28238	64422	MTU200691	40299	76483	TPA100358
16177	52361	CBO101063	28239	64423	MTU200697	40300	76484	TPA100359
16178	52362	CBO101079	28240	64424	MTU200698	40301	76485	TPA100363
16179	52363	CBO101085	28241	64425	MTU200699	40302	76486	TPA100365
16180	52364	CBO101086	28242	64426	MTU200700	40303	76487	TPA100366
16181	52365	CBO101096	28243	64427	MTU200701	40304	76488	TPA100368
16182	52366	CBO101097	28244	64428	MTU200702	40305	76489	TPA100369
16183	52367	CBO101098	28245	64429	MTU200703	40306	76490	TPA100375
16184	52368	CBO101100	28246	64430	MTU200704	40307	76491	TPA100379
16185	52369	CBO101103	28247	64431	MTU200705	40308	76492	TPA100380
16186	52370	CBO101104	28248	64432	MTU200706	40309	76493	TPA100382
16187	52371	CBO101109	28249	64433	MTU200707	40310	76494	TPA100383
16188	52372	CBO101116	28250	64434	MTU200708	40311	76495	TPA100384
16189	52373	CBO101117	28251	64435	MTU200711	40312	76496	TPA100385
16190	52374	CBO101126	28252	64436	MTU200712	40313	76497	TPA100386
16191	52375	CBO101131	28253	64437	MTU200713	40314	76498	TPA100387
16192	52376	CBO101137	28254	64438	MTU200714	40315	76499	TPA100390
16193	52377	CBO101151	28255	64439	MTU200715	40316	76500	TPA100396
16194	52378	CBO101154	28256	64440	MTU200716	40317	76501	TPA100401
16195	52379	CBO101160	28257	64441	MTU200717	40318	76502	TPA100402
16196	52380	CBO101162	28258	64442	MTU200718	40319	76503	TPA100409
16197	52381	CBO101170	28259	64443	MTU200719	40320	76504	TPA100412
16198	52382	CBO101172	28260	64444	MTU200720	40321	76505	TPA100413
16199	52383	CBO101177	28261	64445	MTU200729	40322	76506	TPA100432
16200	52384	CBO101184	28262	64446	MTU200730	40323	76507	TPA100434
16201	52385	CBO101185	28263	64447	MTU200734	40324	76508	TPA100435
16202	52386	CBO101188	28264	64448	MTU200768	40325	76509	TPA100437
16203	52387	CBO101190	28265	64449	MTU200771	40326	76510	TPA100442
16204	52388	CBO101196	28266	64450	MTU200790	40327	76511	TPA100444
16205	52389	CBO101197	28267	64451	MTU200793	40328	76512	TPA100448
16206	52390	CBO101206	28268	64452	MTU200797	40329	76513	TPA100455
16207	52391	CBO101209	28269	64453	MTU200799	40330	76514	TPA100466
16208	52392	CBO101216	28270	64454	MTU200806	40331	76515	TPA100471
16209	52393	CBO101220	28271	64455	MTU200814	40332	76516	TPA100474
16210	52394	CBO101228	28272	64456	MTU200816	40333	76517	TPA100484
16211	52395	CBO101231	28273	64457	MTU200817	40334	76518	TPA100485
16212	52396	CBO101233	28274	64458	MTU200828	40335	76519	TPA100488
16213	52397	CBO101234	28275	64459	MTU200829	40336	76520	TPA100489
16214	52398	CBO101238	28276	64460	MTU200836	40337	76521	TPA100493
16215	52399	CBO101239	28277	64461	MTU200839	40338	76522	TPA100504
16216	52400	CBO101243	28278	64462	MTU200851	40339	76523	TPA100505
16217	52401	CBO101253	28279	64463	MTU200856	40340	76524	TPA100508
16218	52402	CBO101257	28280	64464	MTU200863	40341	76525	TPA100509
16219	52403	CBO101275	28281	64465	MTU200887	40342	76526	TPA100510
16220	52404	CBO101283	28282	64466	MTU200895	40343	76527	TPA100512

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16221	52405	CBO101300	28283	64467	MTU200915	40344	76528	TPA100518
16222	52406	CBO101301	28284	64468	MTU200926	40345	76529	TPA100519
16223	52407	CBO101302	28285	64469	MTU200937	40346	76530	TPA100532
16224	52408	CBO101304	28286	64470	MTU200940	40347	76531	TPA100535
16225	52409	CBO101305	28287	64471	MTU200941	40348	76532	TPA100544
16226	52410	CBO101308	28288	64472	MTU200943	40349	76533	TPA100545
16227	52411	CBO101313	28289	64473	MTU200960	40350	76534	TPA100552
16228	52412	CBO101315	28290	64474	MTU200968	40351	76535	TPA100554
16229	52413	CBO101320	28291	64475	MTU200972	40352	76536	TPA100555
16230	52414	CBO101327	28292	64476	MTU200973	40353	76537	TPA100566
16231	52415	CBO101331	28293	64477	MTU200975	40354	76538	TPA100569
16232	52416	CBO101340	28294	64478	MTU200976	40355	76539	TPA100571
16233	52417	CBO101345	28295	64479	MTU200981	40356	76540	TPA100579
16234	52418	CBO101347	28296	64480	MTU200982	40357	76541	TPA100582
16235	52419	CBO101355	28297	64481	MTU200992	40358	76542	TPA100584
16236	52420	CBO101360	28298	64482	MTU200996	40359	76543	TPA100587
16237	52421	CBO101373	28299	64483	MTU200997	40360	76544	TPA100588
16238	52422	CBO101374	28300	64484	MTU200999	40361	76545	TPA100595
16239	52423	CBO101375	28301	64485	MTU201004	40362	76546	TPA100596
16240	52424	CBO101376	28302	64486	MTU201006	40363	76547	TPA100597
16241	52425	CBO101390	28303	64487	MTU201007	40364	76548	TPA100598
16242	52426	CBO101395	28304	64488	MTU201009	40365	76549	TPA100599
16243	52427	CBO101399	28305	64489	MTU201010	40366	76550	TPA100602
16244	52428	CBO101403	28306	64490	MTU201012	40367	76551	TPA100604
16245	52429	CBO101404	28307	64491	MTU201017	40368	76552	TPA100608
16246	52430	CBO101415	28308	64492	MTU201019	40369	76553	TPA100619
16247	52431	CBO101418	28309	64493	MTU201032	40370	76554	TPA100620
16248	52432	CBO101419	28310	64494	MTU201056	40371	76555	TPA100621
16249	52433	CBO101421	28311	64495	MTU201073	40372	76556	TPA100625
16250	52434	CBO101427	28312	64496	MTU201084	40373	76557	TPA100627
16251	52435	CBO101432	28313	64497	MTU201091	40374	76558	TPA100631
16252	52436	CBO101434	28314	64498	MTU201093	40375	76559	TPA100633
16253	52437	CBO101439	28315	64499	MTU201097	40376	76560	TPA100634
16254	52438	CBO101443	28316	64500	MTU201112	40377	76561	TPA100639
16255	52439	CBO101444	28317	64501	MTU201116	40378	76562	TPA100641
16256	52440	CBO101445	28318	64502	MTU201127	40379	76563	TPA100647
16257	52441	CBO101448	28319	64503	MTU201137	40380	76564	TPA100649
16258	52442	CBO101450	28320	64504	MTU201146	40381	76565	TPA100654
16259	52443	CBO101454	28321	64505	MTU201147	40382	76566	TPA100661
16260	52444	CBO101455	28322	64506	MTU201150	40383	76567	TPA100662
16261	52445	CBO101470	28323	64507	MTU201162	40384	76568	TPA100664
16262	52446	CBO101485	28324	64508	MTU201170	40385	76569	TPA100665
16263	52447	CBO101487	28325	64509	MTU201189	40386	76570	TPA100672
16264	52448	CBO101490	28326	64510	MTU201201	40387	76571	TPA100673
16265	52449	CBO101502	28327	64511	MTU201206	40388	76572	TPA100675
16266	52450	CBO101506	28328	64512	MTU201213	40389	76573	TPA100677
16267	52451	CBO101508	28329	64513	MTU201218	40390	76574	TPA100681
16268	52452	CBO101518	28330	64514	MTU201226	40391	76575	TPA100684
16269	52453	CBO101529	28331	64515	MTU201231	40392	76576	TPA100686
16270	52454	CBO101539	28332	64516	MTU201236	40393	76577	TPA100696
16271	52455	CBO101540	28333	64517	MTU201255	40394	76578	TPA100697
16272	52456	CBO101544	28334	64518	MTU201260	40395	76579	TPA100698
16273	52457	CBO101548	28335	64519	MTU201261	40396	76580	TPA100707
16274	52458	CBO101553	28336	64520	MTU201262	40397	76581	TPA100720
16275	52459	CBO101559	28337	64521	MTU201264	40398	76582	TPA100721

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16276	52460	CBO101579	28338	64522	MTU201270	40399	76583	TPA100727
16277	52461	CBO101580	28339	64523	MTU201275	40400	76584	TPA100728
16278	52462	CBO101582	28340	64524	MTU201279	40401	76585	TPA100731
16279	52463	CBO101588	28341	64525	MTU201280	40402	76586	TPA100732
16280	52464	CBO101598	28342	64526	MTU201281	40403	76587	TPA100734
16281	52465	CBO101635	28343	64527	MTU201282	40404	76588	TPA100735
16282	52466	CBO101640	28344	64528	MTU201283	40405	76589	TPA100736
16283	52467	CBO101645	28345	64529	MTU201285	40406	76590	TPA100737
16284	52468	CBO101651	28346	64530	MTU201287	40407	76591	TPA100738
16285	52469	CBO101665	28347	64531	MTU201288	40408	76592	TPA100750
16286	52470	CBO101667	28348	64532	MTU201290	40409	76593	TPA100752
16287	52471	CBO101671	28349	64533	MTU201291	40410	76594	TPA100757
16288	52472	CBO101676	28350	64534	MTU201298	40411	76595	TPA100759
16289	52473	CBO101681	28351	64535	MTU201299	40412	76596	TPA100762
16290	52474	CBO101685	28352	64536	MTU201306	40413	76597	TPA100763
16291	52475	CBO101692	28353	64537	MTU201308	40414	76598	TPA100770
16292	52476	CBO101696	28354	64538	MTU201321	40415	76599	TPA100772
16293	52477	CBO101700	28355	64539	MTU201324	40416	76600	TPA100786
16294	52478	CBO101704	28356	64540	MTU201326	40417	76601	TPA100790
16295	52479	CBO101731	28357	64541	MTU201333	40418	76602	TPA100800
16296	52480	CBO101733	28358	64542	MTU201337	40419	76603	TPA100808
16297	52481	CBO101744	28359	64543	MTU201352	40420	76604	TPA100812
16298	52482	CBO101747	28360	64544	MTU201364	40421	76605	TPA100813
16299	52483	CBO101748	28361	64545	MTU201366	40422	76606	TPA100815
16300	52484	CBO101756	28362	64546	MTU201374	40423	76607	TPA100819
16301	52485	CBO101759	28363	64547	MTU201377	40424	76608	TPA100821
16302	52486	CBO101773	28364	64548	MTU201388	40425	76609	TPA100822
16303	52487	CBO101778	28365	64549	MTU201390	40426	76610	TPA100825
16304	52488	CBO101782	28366	64550	MTU201393	40427	76611	TPA100828
16305	52489	CBO101783	28367	64551	MTU201396	40428	76612	TPA100829
16306	52490	CBO101784	28368	64552	MTU201397	40429	76613	TPA100832
16307	52491	CBO101785	28369	64553	MTU201402	40430	76614	TPA100835
16308	52492	CBO101794	28370	64554	MTU201403	40431	76615	TPA100839
16309	52493	CBO101797	28371	64555	MTU201404	40432	76616	TPA100840
16310	52494	CBO101804	28372	64556	MTU201417	40433	76617	TPA100841
16311	52495	CBO101814	28373	64557	MTU201418	40434	76618	TPA100852
16312	52496	CBO101824	28374	64558	MTU201422	40435	76619	TPA100869
16313	52497	CBO101827	28375	64559	MTU201428	40436	76620	TPA100871
16314	52498	CBO101831	28376	64560	MTU201429	40437	76621	TPA100874
16315	52499	CBO101832	28377	64561	MTU201430	40438	76622	TPA100876
16316	52500	CBO101836	28378	64562	MTU201433	40439	76623	TPA100877
16317	52501	CBO101837	28379	64563	MTU201436	40440	76624	TPA100878
16318	52502	CBO101838	28380	64564	MTU201442	40441	76625	TPA100879
16319	52503	CBO101845	28381	64565	MTU201444	40442	76626	TPA100881
16320	52504	CBO101852	28382	64566	MTU201447	40443	76627	TPA100882
16321	52505	CBO101853	28383	64567	MTU201462	40444	76628	TPA100883
16322	52506	CBO101857	28384	64568	MTU201463	40445	76629	TPA100888
16323	52507	CBO101859	28385	64569	MTU201472	40446	76630	TPA100893
16324	52508	CBO101866	28386	64570	MTU201501	40447	76631	TPA100895
16325	52509	CBO101868	28387	64571	MTU201515	40448	76632	TPA100896
16326	52510	CBO101875	28388	64572	MTU201526	40449	76633	TPA100897
16327	52511	CBO101881	28389	64573	MTU201527	40450	76634	TPA100898
16328	52512	CBO101891	28390	64574	MTU201547	40451	76635	TPA100899
16329	52513	CBO101893	28391	64575	MTU201568	40452	76636	TPA100907
16330	52514	CBO101902	28392	64576	MTU201572	40453	76637	TPA100914

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16331	52515	CBO101908	28393	64577	MTU201590	40454	76638	TPA100923
16332	52516	CBO101914	28394	64578	MTU201591	40455	76639	TPA100936
16333	52517	CBO101925	28395	64579	MTU201596	40456	76640	TPA100939
16334	52518	CBO101930	28396	64580	MTU201608	40457	76641	TPA100941
16335	52519	CBO101941	28397	64581	MTU201609	40458	76642	TPA100942
16336	52520	CBO101974	28398	64582	MTU201617	40459	76643	TPA100947
16337	52521	CBO101981	28399	64583	MTU201620	40460	76644	TPA100952
16338	52522	CBO101985	28400	64584	MTU201621	40461	76645	TPA100953
16339	52523	CBO101987	28401	64585	MTU201622	40462	76646	TPA100962
16340	52524	CBO101996	28402	64586	MTU201623	40463	76647	TPA100963
16341	52525	CBO102015	28403	64587	MTU201628	40464	76648	TPA100965
16342	52526	CBO102016	28404	64588	MTU201629	40465	76649	TPA100969
16343	52527	CBO102022	28405	64589	MTU201630	40466	76650	TPA100970
16344	52528	CBO102037	28406	64590	MTU201634	40467	76651	TPA100971
16345	52529	CBO102039	28407	64591	MTU201635	40468	76652	TPA100974
16346	52530	CBO102046	28408	64592	MTU201638	40469	76653	TPA100975
16347	52531	CBO102049	28409	64593	MTU201653	40470	76654	TPA100978
16348	52532	CBO102059	28410	64594	MTU201661	40471	76655	TPA100980
16349	52533	CBO102062	28411	64595	MTU201664	40472	76656	TPA100989
16350	52534	CBO102063	28412	64596	MTU201668	40473	76657	TPA100994
16351	52535	CBO102064	28413	64597	MTU201674	40474	76658	TPA100995
16352	52536	CBO102075	28414	64598	MTU201678	40475	76659	TPA100996
16353	52537	CBO102082	28415	64599	MTU201680	40476	76660	TPA100999
16354	52538	CBO102085	28416	64600	MTU201685	40477	76661	TPA101005
16355	52539	CBO102095	28417	64601	MTU201689	40478	76662	TPA101007
16356	52540	CBO102096	28418	64602	MTU201690	40479	76663	TPA101008
16357	52541	CBO102099	28419	64603	MTU201691	40480	76664	TPA101010
16358	52542	CBO102105	28420	64604	MTU201729	40481	76665	TPA101011
16359	52543	CBO102108	28421	64605	MTU201734	40482	76666	TPA101012
16360	52544	CBO102152	28422	64606	MTU201737	40483	76667	TPA101014
16361	52545	CBO102158	28423	64607	MTU201742	40484	76668	TPA101015
16362	52546	CBO102176	28424	64608	MTU201746	40485	76669	TPA101025
16363	52547	CBO102186	28425	64609	MTU201774	40486	76670	TPA101026
16364	52548	CBO102188	28426	64610	MTU201785	40487	76671	TPA101027
16365	52549	CBO102190	28427	64611	MTU201786	40488	76672	TPA101028
16366	52550	CBO102193	28428	64612	MTU201799	40489	76673	TPA101030
16367	52551	CBO102194	28429	64613	MTU201807	40490	76674	UUR100001
16368	52552	CBO102195	28430	64614	MTU201808	40491	76675	UUR100003
16369	52553	CBO102204	28431	64615	MTU201811	40492	76676	UUR100004
16370	52554	CBO102206	28432	64616	MTU201815	40493	76677	UUR100007
16371	52555	CBO102219	28433	64617	MTU201817	40494	76678	UUR100008
16372	52556	CBO102220	28434	64618	MTU201818	40495	76679	UUR100009
16373	52557	CBO102223	28435	64619	MTU201819	40496	76680	UUR100012
16374	52558	CBO102232	28436	64620	MTU201828	40497	76681	UUR100015
16375	52559	CBO102235	28437	64621	MTU201839	40498	76682	UUR100016
16376	52560	CBO102241	28438	64622	MTU201862	40499	76683	UUR100018
16377	52561	CBO102253	28439	64623	MTU201866	40500	76684	UUR100019
16378	52562	CBO102259	28440	64624	MTU201875	40501	76685	UUR100022
16379	52563	CBO102260	28441	64625	MTU201904	40502	76686	UUR100024
16380	52564	CBO102268	28442	64626	MTU201908	40503	76687	UUR100027
16381	52565	CBO102281	28443	64627	MTU201948	40504	76688	UUR100028
16382	52566	CBO102295	28444	64628	MTU201952	40505	76689	UUR100029
16383	52567	CBO102303	28445	64629	MTU201964	40506	76690	UUR100037
16384	52568	CBO102312	28446	64630	MTU201966	40507	76691	UUR100038
16385	52569	CBO102313	28447	64631	MTU201973	40508	76692	UUR100048

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16386	52570	CBO102314	28448	64632	MTU201987	40509	76693	UUR100056
16387	52571	CBO102316	28449	64633	MTU201996	40510	76694	UUR100058
16388	52572	CBO102321	28450	64634	MTU202018	40511	76695	UUR100060
16389	52573	CBO102327	28451	64635	MTU202019	40512	76696	UUR100064
16390	52574	CBO102328	28452	64636	MTU202023	40513	76697	UUR100067
16391	52575	CBO102353	28453	64637	MTU202024	40514	76698	UUR100068
16392	52576	CBO102358	28454	64638	MTU202025	40515	76699	UUR100071
16393	52577	CBO102369	28455	64639	MTU202038	40516	76700	UUR100074
16394	52578	CBO102372	28456	64640	MTU202073	40517	76701	UUR100075
16395	52579	CBO102378	28457	64641	MTU202077	40518	76702	UUR100077
16396	52580	CBO102381	28458	64642	MTU202080	40519	76703	UUR100079
16397	52581	CBO102384	28459	64643	MTU202088	40520	76704	UUR100080
16398	52582	CBO102395	28460	64644	MTU202090	40521	76705	UUR100082
16399	52583	CBO102397	28461	64645	MTU202111	40522	76706	UUR100083
16400	52584	CBO102403	28462	64646	MTU202113	40523	76707	UUR100085
16401	52585	CBO102406	28463	64647	MTU202114	40524	76708	UUR100086
16402	52586	CBO102407	28464	64648	MTU202116	40525	76709	UUR100087
16403	52587	CBO102412	28465	64649	MTU202117	40526	76710	UUR100090
16404	52588	CBO102459	28466	64650	MTU202118	40527	76711	UUR100092
16405	52589	CBO102464	28467	64651	MTU202119	40528	76712	UUR100094
16406	52590	CBO102481	28468	64652	MTU202120	40529	76713	UUR100097
16407	52591	CBO102486	28469	64653	MTU202121	40530	76714	UUR100101
16408	52592	CBO102489	28470	64654	MTU202122	40531	76715	UUR100104
16409	52593	CBO102492	28471	64655	MTU202123	40532	76716	UUR100105
16410	52594	CBO102493	28472	64656	MTU202124	40533	76717	UUR100113
16411	52595	CBO102497	28473	64657	MTU202125	40534	76718	UUR100115
16412	52596	CBO102499	28474	64658	MTU202128	40535	76719	UUR100116
16413	52597	CBO102507	28475	64659	MTU202129	40536	76720	UUR100118
16414	52598	CBO102512	28476	64660	MTU202131	40537	76721	UUR100120
16415	52599	CBO102514	28477	64661	MTU202132	40538	76722	UUR100122
16416	52600	CBO102516	28478	64662	MTU202133	40539	76723	UUR100124
16417	52601	CBO102527	28479	64663	MTU202140	40540	76724	UUR100131
16418	52602	CBO102562	28480	64664	MTU202154	40541	76725	UUR100133
16419	52603	CBO102568	28481	64665	MTU202157	40542	76726	UUR100134
16420	52604	CBO102569	28482	64666	MTU202158	40543	76727	UUR100136
16421	52605	CBO102572	28483	64667	MTU202161	40544	76728	UUR100139
16422	52606	CBO102574	28484	64668	MTU202164	40545	76729	UUR100140
16423	52607	CBO102575	28485	64669	MTU202166	40546	76730	UUR100141
16424	52608	CBO102577	28486	64670	MTU202167	40547	76731	UUR100144
16425	52609	CBO102584	28487	64671	MTU202176	40548	76732	UUR100158
16426	52610	CBO102585	28488	64672	MTU202177	40549	76733	UUR100174
16427	52611	CBO102597	28489	64673	MTU202179	40550	76734	UUR100175
16428	52612	CBO102608	28490	64674	MTU202181	40551	76735	UUR100177
16429	52613	CBO102612	28491	64675	MTU202182	40552	76736	UUR100180
16430	52614	CBO102613	28492	64676	MTU202184	40553	76737	UUR100184
16431	52615	CBO102626	28493	64677	MTU202185	40554	76738	UUR100185
16432	52616	CBO102636	28494	64678	MTU202188	40555	76739	UUR100186
16433	52617	CBO102641	28495	64679	MTU202191	40556	76740	UUR100187
16434	52618	CBO102643	28496	64680	MTU202199	40557	76741	UUR100188
16435	52619	CBO102646	28497	64681	MTU202200	40558	76742	UUR100192
16436	52620	CBO102655	28498	64682	MTU202210	40559	76743	UUR100193
16437	52621	CBO102656	28499	64683	MTU202211	40560	76744	UUR100194
16438	52622	CBO102661	28500	64684	MTU202218	40561	76745	UUR100195
16439	52623	CBO102667	28501	64685	MTU202245	40562	76746	UUR100196
16440	52624	CBO102672	28502	64686	MTU202247	40563	76747	UUR100197

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16441	52625	CBO102674	28503	64687	MTU202253	40564	76748	UUR100200
16442	52626	CBO102675	28504	64688	MTU202264	40565	76749	UUR100202
16443	52627	CBO102678	28505	64689	MTU202265	40566	76750	UUR100203
16444	52628	CBO102681	28506	64690	MTU202291	40567	76751	UUR100204
16445	52629	CBO102689	28507	64691	MTU202299	40568	76752	UUR100210
16446	52630	CBO102699	28508	64692	MTU202300	40569	76753	UUR100211
16447	52631	CBO102700	28509	64693	MTU202301	40570	76754	UUR100212
16448	52632	CBO102707	28510	64694	MTU202309	40571	76755	UUR100213
16449	52633	CBO102717	28511	64695	MTU202311	40572	76756	UUR100217
16450	52634	CBO102722	28512	64696	MTU202320	40573	76757	UUR100223
16451	52635	CBO102725	28513	64697	MTU202321	40574	76758	UUR100224
16452	52636	CBO102727	28514	64698	MTU202325	40575	76759	UUR100229
16453	52637	CBO102730	28515	64699	MTU202328	40576	76760	UUR100230
16454	52638	CBO102736	28516	64700	MTU202330	40577	76761	UUR100231
16455	52639	CBO102746	28517	64701	MTU202336	40578	76762	UUR100232
16456	52640	CBO102754	28518	64702	MTU202344	40579	76763	UUR100233
16457	52641	CBO102757	28519	64703	MTU202348	40580	76764	UUR100234
16458	52642	CBO102771	28520	64704	MTU202358	40581	76765	UUR100235
16459	52643	CBO102775	28521	64705	MTU202376	40582	76766	UUR100236
16460	52644	CBO102777	28522	64706	MTU202378	40583	76767	UUR100237
16461	52645	CBO102786	28523	64707	MTU202391	40584	76768	UUR100238
16462	52646	CBO102797	28524	64708	MTU202392	40585	76769	UUR100239
16463	52647	CBO102806	28525	64709	MTU202404	40586	76770	UUR100240
16464	52648	CBO102816	28526	64710	MTU202405	40587	76771	UUR100241
16465	52649	CBO102824	28527	64711	MTU202406	40588	76772	UUR100242
16466	52650	CBO102827	28528	64712	MTU202407	40589	76773	UUR100243
16467	52651	CBO102837	28529	64713	MTU202408	40590	76774	UUR100244
16468	52652	CBO102854	28530	64714	MTU202412	40591	76775	UUR100245
16469	52653	CBO102863	28531	64715	MTU202418	40592	76776	UUR100246
16470	52654	CBO102871	28532	64716	MTU202420	40593	76777	UUR100247
16471	52655	CBO102910	28533	64717	MTU202421	40594	76778	UUR100248
16472	52656	CBO102919	28534	64718	MTU202429	40595	76779	UUR100249
16473	52657	CBO102927	28535	64719	MTU202431	40596	76780	UUR100250
16474	52658	CBO102930	28536	64720	MTU202434	40597	76781	UUR100251
16475	52659	CBO102935	28537	64721	MTU202435	40598	76782	UUR100252
16476	52660	CBO102943	28538	64722	MTU202439	40599	76783	UUR100253
16477	52661	CBO102946	28539	64723	MTU202440	40600	76784	UUR100255
16478	52662	CBO102950	28540	64724	MTU202441	40601	76785	UUR100256
16479	52663	CBO102953	28541	64725	MTU202443	40602	76786	UUR100257
16480	52664	CBO102960	28542	64726	MTU202451	40603	76787	UUR100258
16481	52665	CBO102961	28543	64727	MTU202459	40604	76788	UUR100259
16482	52666	CBO102962	28544	64728	MTU202460	40605	76789	UUR100260
16483	52667	CBO102964	28545	64729	MTU202461	40606	76790	UUR100266
16484	52668	CBO102965	28546	64730	MTU202464	40607	76791	UUR100269
16485	52669	CBO102972	28547	64731	MTU202465	40608	76792	UUR100270
16486	52670	CBO102974	28548	64732	MTU202468	40609	76793	UUR100272
16487	52671	CBO102977	28549	64733	MTU202486	40610	76794	UUR100275
16488	52672	CBO102979	28550	64734	MTU202496	40611	76795	UUR100278
16489	52673	CBO102992	28551	64735	MTU202503	40612	76796	UUR100279
16490	52674	CBO102997	28552	64736	MTU202514	40613	76797	UUR100280
16491	52675	CBO102999	28553	64737	MTU202515	40614	76798	UUR100281
16492	52676	CBO103006	28554	64738	MTU202517	40615	76799	UUR100284
16493	52677	CBO103013	28555	64739	MTU202518	40616	76800	UUR100285
16494	52678	CBO103029	28556	64740	MTU202522	40617	76801	UUR100286
16495	52679	CBO103030	28557	64741	MTU202526	40618	76802	UUR100287

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16496	52680	CBO103032	28558	64742	MTU202530	40619	76803	UUR100288
16497	52681	CBO103036	28559	64743	MTU202534	40620	76804	UUR100302
16498	52682	CBO103038	28560	64744	MTU202535	40621	76805	UUR100303
16499	52683	CBO103040	28561	64745	MTU202543	40622	76806	UUR100308
16500	52684	CBO103041	28562	64746	MTU202546	40623	76807	UUR100310
16501	52685	CBO103047	28563	64747	MTU202567	40624	76808	UUR100311
16502	52686	CBO103048	28564	64748	MTU202569	40625	76809	UUR100312
16503	52687	CBO103052	28565	64749	MTU202577	40626	76810	UUR100320
16504	52688	CBO103058	28566	64750	MTU202578	40627	76811	UUR100322
16505	52689	CBO103064	28567	64751	MTU202597	40628	76812	UUR100329
16506	52690	CBO103068	28568	64752	MTU202605	40629	76813	UUR100332
16507	52691	CBO103078	28569	64753	MTU202612	40630	76814	UUR100341
16508	52692	CBO103098	28570	64754	MTU202632	40631	76815	UUR100344
16509	52693	CBO103104	28571	64755	MTU202655	40632	76816	UUR100350
16510	52694	CBO103110	28572	64756	MTU202665	40633	76817	UUR100351
16511	52695	CBO103112	28573	64757	MTU202666	40634	76818	UUR100356
16512	52696	CBO103120	28574	64758	MTU202676	40635	76819	UUR100357
16513	52697	CBO103121	28575	64759	MTU202686	40636	76820	UUR100360
16514	52698	CBO103123	28576	64760	MTU202692	40637	76821	UUR100364
16515	52699	CBO103128	28577	64761	MTU202700	40638	76822	UUR100366
16516	52700	CBO103139	28578	64762	MTU202703	40639	76823	UUR100367
16517	52701	CBO103141	28579	64763	MTU202704	40640	76824	UUR100371
16518	52702	CBO103142	28580	64764	MTU202709	40641	76825	UUR100372
16519	52703	CBO103145	28581	64765	MTU202711	40642	76826	UUR100373
16520	52704	CBO103147	28582	64766	MTU202715	40643	76827	UUR100374
16521	52705	CBO103162	28583	64767	MTU202719	40644	76828	UUR100377
16522	52706	CBO103178	28584	64768	MTU202726	40645	76829	UUR100379
16523	52707	CBO103182	28585	64769	MTU202727	40646	76830	UUR100385
16524	52708	CBO103185	28586	64770	MTU202735	40647	76831	UUR100386
16525	52709	CBO103187	28587	64771	MTU202743	40648	76832	UUR100388
16526	52710	CBO103199	28588	64772	MTU202744	40649	76833	UUR100389
16527	52711	CBO103205	28589	64773	MTU202745	40650	76834	UUR100392
16528	52712	CBO103215	28590	64774	MTU202747	40651	76835	UUR100394
16529	52713	CBO103219	28591	64775	MTU202748	40652	76836	UUR100396
16530	52714	CBO103220	28592	64776	MTU202753	40653	76837	UUR100397
16531	52715	CBO103224	28593	64777	MTU202755	40654	76838	UUR100400
16532	52716	CBO103233	28594	64778	MTU202763	40655	76839	UUR100405
16533	52717	CBO103235	28595	64779	MTU202776	40656	76840	UUR100408
16534	52718	CBO103236	28596	64780	MTU202795	40657	76841	UUR100414
16535	52719	CBO103246	28597	64781	MTU202801	40658	76842	UUR100415
16536	52720	CBO103254	28598	64782	MTU202803	40659	76843	UUR100416
16537	52721	CBO103256	28599	64783	MTU202807	40660	76844	UUR100417
16538	52722	CBO103263	28600	64784	MTU202809	40661	76845	UUR100418
16539	52723	CBO103264	28601	64785	MTU202814	40662	76846	UUR100419
16540	52724	CBO103265	28602	64786	MTU202815	40663	76847	UUR100434
16541	52725	CBO103269	28603	64787	MTU202817	40664	76848	UUR100435
16542	52726	CBO103272	28604	64788	MTU202830	40665	76849	UUR100437
16543	52727	CBO103276	28605	64789	MTU202843	40666	76850	UUR100439
16544	52728	CBO103281	28606	64790	MTU202844	40667	76851	UUR100440
16545	52729	CBO103283	28607	64791	MTU202845	40668	76852	UUR100451
16546	52730	CBO103295	28608	64792	MTU202851	40669	76853	UUR100457
16547	52731	CBO103307	28609	64793	MTU202852	40670	76854	UUR100458
16548	52732	CBO103313	28610	64794	MTU202862	40671	76855	UUR100462
16549	52733	CBO103315	28611	64795	MTU202864	40672	76856	UUR100463
16550	52734	CBO103321	28612	64796	MTU202865	40673	76857	UUR100465

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16551	52735	CBO103340	28613	64797	MTU202866	40674	76858	UUR100466
16552	52736	CBO103355	28614	64798	MTU202868	40675	76859	UUR100471
16553	52737	CBO103358	28615	64799	MTU202869	40676	76860	UUR100472
16554	52738	CBO103359	28616	64800	MTU202870	40677	76861	UUR100473
16555	52739	CBO103360	28617	64801	MTU202871	40678	76862	UUR100475
16556	52740	CBO103373	28618	64802	MTU202878	40679	76863	UUR100479
16557	52741	CBO103374	28619	64803	MTU202880	40680	76864	UUR100480
16558	52742	CBO103376	28620	64804	MTU202883	40681	76865	UUR100487
16559	52743	CBO103378	28621	64805	MTU202884	40682	76866	UUR100488
16560	52744	CBO103379	28622	64806	MTU202886	40683	76867	UUR100490
16561	52745	CBO103381	28623	64807	MTU202908	40684	76868	UUR100496
16562	52746	CBO103389	28624	64808	MTU202919	40685	76869	UUR100498
16563	52747	CBO103391	28625	64809	MTU202926	40686	76870	UUR100499
16564	52748	CBO103395	28626	64810	MTU202929	40687	76871	UUR100500
16565	52749	CBO103408	28627	64811	MTU202933	40688	76872	UUR100503
16566	52750	CBO103413	28628	64812	MTU202934	40689	76873	UUR100505
16567	52751	CBO103420	28629	64813	MTU202939	40690	76874	UUR100506
16568	52752	CBO103433	28630	64814	MTU202942	40691	76875	UUR100511
16569	52753	CBO103439	28631	64815	MTU202943	40692	76876	UUR100512
16570	52754	CBO103442	28632	64816	MTU202944	40693	76877	UUR100513
16571	52755	CBO103445	28633	64817	MTU202948	40694	76878	UUR100517
16572	52756	CBO103448	28634	64818	MTU202950	40695	76879	UUR100518
16573	52757	CBO103462	28635	64819	MTU202954	40696	76880	UUR100519
16574	52758	CBO103473	28636	64820	MTU202955	40697	76881	UUR100520
16575	52759	CBO103480	28637	64821	MTU202963	40698	76882	UUR100522
16576	52760	CBO103490	28638	64822	MTU202964	40699	76883	UUR100525
16577	52761	CBO103491	28639	64823	MTU202965	40700	76884	UUR100526
16578	52762	CBO103493	28640	64824	MTU202971	40701	76885	UUR100528
16579	52763	CBO103496	28641	64825	MTU202972	40702	76886	UUR100529
16580	52764	CBO103499	28642	64826	MTU202973	40703	76887	UUR100530
16581	52765	CBO103509	28643	64827	MTU202974	40704	76888	UUR100531
16582	52766	CBO103513	28644	64828	MTU202976	40705	76889	UUR100534
16583	52767	CBO103516	28645	64829	MTU202980	40706	76890	UUR100535
16584	52768	CBO103521	28646	64830	MTU202984	40707	76891	UUR100536
16585	52769	CBO103526	28647	64831	MTU202994	40708	76892	UUR100539
16586	52770	CBO103541	28648	64832	MTU203003	40709	76893	UUR100540
16587	52771	CBO103547	28649	64833	MTU203005	40710	76894	UUR100543
16588	52772	CBO103560	28650	64834	MTU203011	40711	76895	UUR100544
16589	52773	CBO103563	28651	64835	MTU203012	40712	76896	UUR100545
16590	52774	CBO103567	28652	64836	MTU203042	40713	76897	UUR100546
16591	52775	CBO103577	28653	64837	MTU203060	40714	76898	UUR100547
16592	52776	CBO103578	28654	64838	MTU203064	40715	76899	UUR100550
16593	52777	CBO103581	28655	64839	MTU203065	40716	76900	UUR100551
16594	52778	CBO103582	28656	64840	MTU203069	40717	76901	UUR100556
16595	52779	CBO103583	28657	64841	MTU203076	40718	76902	UUR100557
16596	52780	CBO103586	28658	64842	MTU203106	40719	76903	UUR100558
16597	52781	CBO103589	28659	64843	MTU203107	40720	76904	UUR100559
16598	52782	CBO103591	28660	64844	MTU203113	40721	76905	UUR100560
16599	52783	CBO103609	28661	64845	MTU203142	40722	76906	UUR100566
16600	52784	CBO103612	28662	64846	MTU203144	40723	76907	UUR100573
16601	52785	CBO103614	28663	64847	MTU203156	40724	76908	UUR100574
16602	52786	CBO103619	28664	64848	MTU203167	40725	76909	UUR100575
16603	52787	CBO103621	28665	64849	MTU203186	40726	76910	UUR100576
16604	52788	CBO103642	28666	64850	MTU203187	40727	76911	UUR100577
16605	52789	CBO103643	28667	64851	MTU203193	40728	76912	UUR100579

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16606	52790	CBO103647	28668	64852	MTU203196	40729	76913	UUR100580
16607	52791	CBO103649	28669	64853	MTU203197	40730	76914	UUR100583
16608	52792	CBO103651	28670	64854	MTU203204	40731	76915	UUR100584
16609	52793	CBO103653	28671	64855	MTU203210	40732	76916	UUR100585
16610	52794	CBO103664	28672	64856	MTU203212	40733	76917	UUR100586
16611	52795	CBO103674	28673	64857	MTU203219	40734	76918	UUR100587
16612	52796	CBO103679	28674	64858	MTU203253	40735	76919	UUR100588
16613	52797	CBO103680	28675	64859	MTU203263	40736	76920	UUR100589
16614	52798	CBO103682	28676	64860	MTU203265	40737	76921	UUR100592
16615	52799	CBO103696	28677	64861	MTU203266	40738	76922	UUR100593
16616	52800	CBO103697	28678	64862	MTU203275	40739	76923	UUR100594
16617	52801	CBO103698	28679	64863	MTU203283	40740	76924	UUR100597
16618	52802	CBO103706	28680	64864	MTU203288	40741	76925	UUR100599
16619	52803	CBO103707	28681	64865	MTU203289	40742	76926	UUR100601
16620	52804	CBO103711	28682	64866	MTU203293	40743	76927	UUR100602
16621	52805	CBO103715	28683	64867	MTU203301	40744	76928	UUR100603
16622	52806	CBO103725	28684	64868	MTU203321	40745	76929	UUR100606
16623	52807	CBO103735	28685	64869	MTU203322	40746	76930	UUR100608
16624	52808	CBO103745	28686	64870	MTU203335	40747	76931	UUR100609
16625	52809	CBO103748	28687	64871	MTU203338	40748	76932	UUR100610
16626	52810	CBO103750	28688	64872	MTU203341	40749	76933	UUR100611
16627	52811	CBO103752	28689	64873	MTU203347	40750	76934	VCH100003
16628	52812	CBO103757	28690	64874	MTU203350	40751	76935	VCH100004
16629	52813	CBO103759	28691	64875	MTU203373	40752	76936	VCH100006
16630	52814	CBO103765	28692	64876	MTU203377	40753	76937	VCH100007
16631	52815	CBO103766	28693	64877	MTU203389	40754	76938	VCH100012
16632	52816	CBO103777	28694	64878	MTU203394	40755	76939	VCH100013
16633	52817	CBO103787	28695	64879	MTU203395	40756	76940	VCH100015
16634	52818	CBO103801	28696	64880	MTU203396	40757	76941	VCH100019
16635	52819	CBO103805	28697	64881	MTU203401	40758	76942	VCH100020
16636	52820	CBO103820	28698	64882	MTU203407	40759	76943	VCH100021
16637	52821	CBO103821	28699	64883	MTU203409	40760	76944	VCH100028
16638	52822	CBO103823	28700	64884	MTU203410	40761	76945	VCH100029
16639	52823	CBO103824	28701	64885	MTU203411	40762	76946	VCH100035
16640	52824	CBO103826	28702	64886	MTU203412	40763	76947	VCH100040
16641	52825	CBO103831	28703	64887	MTU203413	40764	76948	VCH100043
16642	52826	CBO103837	28704	64888	MTU203414	40765	76949	VCH100044
16643	52827	CBO103842	28705	64889	MTU203415	40766	76950	VCH100047
16644	52828	CBO103848	28706	64890	MTU203421	40767	76951	VCH100056
16645	52829	CBO103858	28707	64891	MTU203428	40768	76952	VCH100062
16646	52830	CBO103865	28708	64892	MTU203431	40769	76953	VCH100065
16647	52831	CBO103870	28709	64893	MTU203452	40770	76954	VCH100080
16648	52832	CBO103872	28710	64894	MTU203456	40771	76955	VCH100083
16649	52833	CBO103873	28711	64895	MTU203460	40772	76956	VCH100105
16650	52834	CBO103874	28712	64896	MTU203462	40773	76957	VCH100108
16651	52835	CBO103886	28713	64897	MTU203475	40774	76958	VCH100112
16652	52836	CBO103893	28714	64898	MTU203523	40775	76959	VCH100120
16653	52837	CBO103904	28715	64899	MTU203528	40776	76960	VCH100127
16654	52838	CBO103909	28716	64900	MTU203529	40777	76961	VCH100128
16655	52839	CBO103912	28717	64901	MTU203530	40778	76962	VCH100133
16656	52840	CBO103921	28718	64902	MTU203533	40779	76963	VCH100134
16657	52841	CBO103928	28719	64903	MTU203538	40780	76964	VCH100135
16658	52842	CBO103931	28720	64904	MTU203540	40781	76965	VCH100138
16659	52843	CBO103935	28721	64905	MTU203543	40782	76966	VCH100146
16660	52844	CBO103939	28722	64906	MTU203544	40783	76967	VCH100150

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16661	52845	CBO103949	28723	64907	MTU203546	40784	76968	VCH100156
16662	52846	CBO103951	28724	64908	MTU203554	40785	76969	VCH100160
16663	52847	CBO103952	28725	64909	MTU203556	40786	76970	VCH100162
16664	52848	CBO103956	28726	64910	MTU203558	40787	76971	VCH100165
16665	52849	CBO103958	28727	64911	MTU203566	40788	76972	VCH100168
16666	52850	CBO103963	28728	64912	MTU203571	40789	76973	VCH100169
16667	52851	CDF100003	28729	64913	MTU203573	40790	76974	VCH100184
16668	52852	CDF100007	28730	64914	MTU203575	40791	76975	VCH100185
16669	52853	CDF100009	28731	64915	MTU203589	40792	76976	VCH100188
16670	52854	CDF100014	28732	64916	MTU203594	40793	76977	VCH100192
16671	52855	CDF100018	28733	64917	MTU203605	40794	76978	VCH100194
16672	52856	CDF100026	28734	64918	MTU203609	40795	76979	VCH100198
16673	52857	CDF100033	28735	64919	MTU203610	40796	76980	VCH100199
16674	52858	CDF100035	28736	64920	MTU203611	40797	76981	VCH100200
16675	52859	CDF100043	28737	64921	MTU203613	40798	76982	VCH100201
16676	52860	CDF100046	28738	64922	MTU203618	40799	76983	VCH100205
16677	52861	CDF100047	28739	64923	MTU203634	40800	76984	VCH100207
16678	52862	CDF100051	28740	64924	MTU203642	40801	76985	VCH100209
16679	52863	CDF100053	28741	64925	MTU203654	40802	76986	VCH100215
16680	52864	CDF100058	28742	64926	MTU203655	40803	76987	VCH100216
16681	52865	CDF100059	28743	64927	MTU203658	40804	76988	VCH100217
16682	52866	CDF100062	28744	64928	MTU203659	40805	76989	VCH100219
16683	52867	CDF100063	28745	64929	MTU203661	40806	76990	VCH100222
16684	52868	CDF100066	28746	64930	MTU203662	40807	76991	VCH100235
16685	52869	CDF100068	28747	64931	MTU203667	40808	76992	VCH100245
16686	52870	CDF100070	28748	64932	MTU203674	40809	76993	VCH100256
16687	52871	CDF100071	28749	64933	MTU203703	40810	76994	VCH100257
16688	52872	CDF100072	28750	64934	MTU203726	40811	76995	VCH100260
16689	52873	CDF100075	28751	64935	MTU203754	40812	76996	VCH100261
16690	52874	CDF100076	28752	64936	MTU203758	40813	76997	VCH100266
16691	52875	CDF100087	28753	64937	MTU203761	40814	76998	VCH100270
16692	52876	CDF100088	28754	64938	MTU203772	40815	76999	VCH100277
16693	52877	CDF100095	28755	64939	MTU203778	40816	77000	VCH100291
16694	52878	CDF100096	28756	64940	MTU203779	40817	77001	VCH100292
16695	52879	CDF100099	28757	64941	MTU203787	40818	77002	VCH100294
16696	52880	CDF100102	28758	64942	MTU203803	40819	77003	VCH100303
16697	52881	CDF100104	28759	64943	MTU203804	40820	77004	VCH100307
16698	52882	CDF100113	28760	64944	MTU203821	40821	77005	VCH100313
16699	52883	CDF100120	28761	64945	MTU203824	40822	77006	VCH100316
16700	52884	CDF100125	28762	64946	MTU203852	40823	77007	VCH100318
16701	52885	CDF100127	28763	64947	MTU203855	40824	77008	VCH100319
16702	52886	CDF100128	28764	64948	MTU203860	40825	77009	VCH100320
16703	52887	CDF100130	28765	64949	MTU203863	40826	77010	VCH100321
16704	52888	CDF100131	28766	64950	MTU203864	40827	77011	VCH100322
16705	52889	CDF100132	28767	64951	MTU203866	40828	77012	VCH100323
16706	52890	CDF100133	28768	64952	MTU203868	40829	77013	VCH100324
16707	52891	CDF100134	28769	64953	MTU203869	40830	77014	VCH100339
16708	52892	CDF100139	28770	64954	MTU300292	40831	77015	VCH100340
16709	52893	CDF100154	28771	64955	MTU300544	40832	77016	VCH100344
16710	52894	CDF100159	28772	64956	MTU301399	40833	77017	VCH100353
16711	52895	CDF100169	28773	64957	MTU301470	40834	77018	VCH100354
16712	52896	CDF100177	28774	64958	MTU301482	40835	77019	VCH100355
16713	52897	CDF100179	28775	64959	MTU301610	40836	77020	VCH100356
16714	52898	CDF100180	28776	64960	MTU301614	40837	77021	VCH100357
16715	52899	CDF100184	28777	64961	MTU301852	40838	77022	VCH100361

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16716	52900	CDF100186	28778	64962	MTU302860	40839	77023	VCH100362
16717	52901	CDF100203	28779	64963	MTU303412	40840	77024	VCH100363
16718	52902	CDF100209	28780	64964	MTU303433	40841	77025	VCH100364
16719	52903	CDF100210	28781	64965	MTU400006	40842	77026	VCH100366
16720	52904	CDF100211	28782	64966	MTU400129	40843	77027	VCH100367
16721	52905	CDF100218	28783	64967	MTU400793	40844	77028	VCH100369
16722	52906	CDF100221	28784	64968	MTU400863	40845	77029	VCH100374
16723	52907	CDF100237	28785	64969	MTU401062	40846	77030	VCH100384
16724	52908	CDF100241	28786	64970	MTU402591	40847	77031	VCH100385
16725	52909	CDF100246	28787	64971	MTU402689	40848	77032	VCH100387
16726	52910	CDF100250	28788	64972	MTU403167	40849	77033	VCH100389
16727	52911	CDF100252	28789	64973	MTU403327	40850	77034	VCH100390
16728	52912	CDF100257	28790	64974	MTU403379	40851	77035	VCH100392
16729	52913	CDF100258	28791	64975	MTU403382	40852	77036	VCH100393
16730	52914	CDF100259	28792	64976	MTU403691	40853	77037	VCH100410
16731	52915	CDF100265	28793	64977	MTU403766	40854	77038	VCH100415
16732	52916	CDF100266	28794	64978	MTU404234	40855	77039	VCH100423
16733	52917	CDF100269	28795	64979	MTU405320	40856	77040	VCH100428
16734	52918	CDF100271	28796	64980	MTU405366	40857	77041	VCH100429
16735	52919	CDF100272	28797	64981	MTU405582	40858	77042	VCH100430
16736	52920	CDF100273	28798	64982	MTU405732	40859	77043	VCH100431
16737	52921	CDF100282	28799	64983	MTU405761	40860	77044	VCH100432
16738	52922	CDF100283	28800	64984	MTU405812	40861	77045	VCH100435
16739	52923	CDF100284	28801	64985	MTU405844	40862	77046	VCH100438
16740	52924	CDF100285	28802	64986	MTU406070	40863	77047	VCH100444
16741	52925	CDF100292	28803	64987	MTU406545	40864	77048	VCH100451
16742	52926	CDF100310	28804	64988	MTU406882	40865	77049	VCH100456
16743	52927	CDF100311	28805	64989	MTU407268	40866	77050	VCH100457
16744	52928	CDF100312	28806	64990	MTU408202	40867	77051	VCH100460
16745	52929	CDF100314	28807	64991	MTU408706	40868	77052	VCH100461
16746	52930	CDF100316	28808	64992	MTU409282	40869	77053	VCH100464
16747	52931	CDF100322	28809	64993	MTU409357	40870	77054	VCH100465
16748	52932	CDF100332	28810	64994	MTU410483	40871	77055	VCH100467
16749	52933	CDF100334	28811	64995	MTU411238	40872	77056	VCH100468
16750	52934	CDF100340	28812	64996	MTU411274	40873	77057	VCH100472
16751	52935	CDF100344	28813	64997	NGO100006	40874	77058	VCH100473
16752	52936	CDF100351	28814	64998	NGO100013	40875	77059	VCH100475
16753	52937	CDF100354	28815	64999	NGO100018	40876	77060	VCH100477
16754	52938	CDF100356	28816	65000	NGO100025	40877	77061	VCH100478
16755	52939	CDF100358	28817	65001	NGO100027	40878	77062	VCH100480
16756	52940	CDF100360	28818	65002	NGO100030	40879	77063	VCH100482
16757	52941	CDF100361	28819	65003	NGO100032	40880	77064	VCH100495
16758	52942	CDF100362	28820	65004	NGO100033	40881	77065	VCH100502
16759	52943	CDF100364	28821	65005	NGO100038	40882	77066	VCH100506
16760	52944	CDF100372	28822	65006	NGO100042	40883	77067	VCH100509
16761	52945	CDF100373	28823	65007	NGO100045	40884	77068	VCH100510
16762	52946	CDF100374	28824	65008	NGO100049	40885	77069	VCH100511
16763	52947	CDF100380	28825	65009	NGO100051	40886	77070	VCH100513
16764	52948	CDF100385	28826	65010	NGO100059	40887	77071	VCH100518
16765	52949	CDF100403	28827	65011	NGO100062	40888	77072	VCH100519
16766	52950	CDF100404	28828	65012	NGO100068	40889	77073	VCH100525
16767	52951	CDF100406	28829	65013	NGO100069	40890	77074	VCH100528
16768	52952	CDF100408	28830	65014	NGO100074	40891	77075	VCH100533
16769	52953	CDF100424	28831	65015	NGO100075	40892	77076	VCH100534
16770	52954	CDF100432	28832	65016	NGO100078	40893	77077	VCH100535

WO 02/077183						PCT/US02/09107		
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16771	52955	CDF100438	28833	65017	NGO100079	40894	77078	VCH100538
16772	52956	CDF100440	28834	65018	NGO100089	40895	77079	VCH100540
16773	52957	CDF100442	28835	65019	NGO100092	40896	77080	VCH100542
16774	52958	CDF100453	28836	65020	NGO100096	40897	77081	VCH100544
16775	52959	CDF100458	28837	65021	NGO100099	40898	77082	VCH100549
16776	52960	CDF100459	28838	65022	NGO100106	40899	77083	VCH100550
16777	52961	CDF100480	28839	65023	NGO100109	40900	77084	VCH100551
16778	52962	CDF100483	28840	65024	NGO100112	40901	77085	VCH100552
16779	52963	CDF100484	28841	65025	NGO100123	40902	77086	VCH100553
16780	52964	CDF100485	28842	65026	NGO100131	40903	77087	VCH100554
16781	52965	CDF100493	28843	65027	NGO100136	40904	77088	VCH100556
16782	52966	CDF100494	28844	65028	NGO100139	40905	77089	VCH100557
16783	52967	CDF100497	28845	65029	NGO100148	40906	77090	VCH100560
16784	52968	CDF100502	28846	65030	NGO100151	40907	77091	VCH100561
16785	52969	CDF100503	28847	65031	NGO100154	40908	77092	VCH100566
16786	52970	CDF100504	28848	65032	NGO100157	40909	77093	VCH100572
16787	52971	CDF100511	28849	65033	NGO100160	40910	77094	VCH100581
16788	52972	CDF100513	28850	65034	NGO100170	40911	77095	VCH100582
16789	52973	CDF100515	28851	65035	NGO100172	40912	77096	VCH100583
16790	52974	CDF100518	28852	65036	NGO100173	40913	77097	VCH100584
16791	52975	CDF100524	28853	65037	NGO100175	40914	77098	VCH100585
16792	52976	CDF100529	28854	65038	NGO100178	40915	77099	VCH100590
16793	52977	CDF100530	28855	65039	NGO100180	40916	77100	VCH100591
16794	52978	CDF100533	28856	65040	NGO100181	40917	77101	VCH100593
16795	52979	CDF100537	28857	65041	NGO100183	40918	77102	VCH100611
16796	52980	CDF100539	28858	65042	NGO100185	40919	77103	VCH100612
16797	52981	CDF100545	28859	65043	NGO100195	40920	77104	VCH100620
16798	52982	CDF100546	28860	65044	NGO100196	40921	77105	VCH100621
16799	52983	CDF100547	28861	65045	NGO100198	40922	77106	VCH100625
16800	52984	CDF100548	28862	65046	NGO100201	40923	77107	VCH100626
16801	52985	CDF100549	28863	65047	NGO100202	40924	77108	VCH100627
16802	52986	CDF100550	28864	65048	NGO100207	40925	77109	VCH100630
16803	52987	CDF100552	28865	65049	NGO100210	40926	77110	VCH100631
16804	52988	CDF100553	28866	65050	NGO100212	40927	77111	VCH100633
16805	52989	CDF100554	28867	65051	NGO100216	40928	77112	VCH100634
16806	52990	CDF100556	28868	65052	NGO100223	40929	77113	VCH100635
16807	52991	CDF100557	28869	65053	NGO100225	40930	77114	VCH100646
16808	52992	CDF100573	28870	65054	NGO100228	40931	77115	VCH100647
16809	52993	CDF100578	28871	65055	NGO100235	40932	77116	VCH100650
16810	52994	CDF100584	28872	65056	NGO100236	40933	77117	VCH100651
16811	52995	CDF100586	28873	65057	NGO100237	40934	77118	VCH100654
16812	52996	CDF100587	28874	65058	NGO100241	40935	77119	VCH100655
16813	52997	CDF100604	28875	65059	NGO100244	40936	77120	VCH100662
16814	52998	CDF100605	28876	65060	NGO100248	40937	77121	VCH100663
16815	52999	CDF100608	28877	65061	NGO100249	40938	77122	VCH100665
16816	53000	CDF100611	28878	65062	NGO100250	40939	77123	VCH100666
16817	53001	CDF100616	28879	65063	NGO100251	40940	77124	VCH100667
16818	53002	CDF100620	28880	65064	NGO100260	40941	77125	VCH100668
16819	53003	CDF100635	28881	65065	NGO100273	40942	77126	VCH100669
16820	53004	CDF100645	28882	65066	NGO100274	40943	77127	VCH100677
16821	53005	CDF100649	28883	65067	NGO100285	40944	77128	VCH100679
16822	53006	CDF100661	28884	65068	NGO100287	40945	77129	VCH100680
16823	53007	CDF100673	28885	65069	NGO100293	40946	77130	VCH100681
16824	53008	CDF100692	28886	65070	NGO100300	40947	77131	VCH100685
16825	53009	CDF100712	28887	65071	NGO100301	40948	77132	VCH100698

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16826	53010	CDF100714	28888	65072	NGO100306	40949	77133	VCH100703
16827	53011	CDF100717	28889	65073	NGO100315	40950	77134	VCH100704
16828	53012	CDF100724	28890	65074	NGO100323	40951	77135	VCH100707
16829	53013	CDF100725	28891	65075	NGO100326	40952	77136	VCH100713
16830	53014	CDF100727	28892	65076	NGO100336	40953	77137	VCH100718
16831	53015	CDF100729	28893	65077	NGO100339	40954	77138	VCH100723
16832	53016	CDF100733	28894	65078	NGO100345	40955	77139	VCH100726
16833	53017	CDF100735	28895	65079	NGO100361	40956	77140	VCH100728
16834	53018	CDF100738	28896	65080	NGO100369	40957	77141	VCH100734
16835	53019	CDF100745	28897	65081	NGO100380	40958	77142	VCH100736
16836	53020	CDF100746	28898	65082	NGO100381	40959	77143	VCH100745
16837	53021	CDF100747	28899	65083	NGO100382	40960	77144	VCH100746
16838	53022	CDF100748	28900	65084	NGO100398	40961	77145	VCH100747
16839	53023	CDF100749	28901	65085	NGO100403	40962	77146	VCH100749
16840	53024	CDF100750	28902	65086	NGO100413	40963	77147	VCH100750
16841	53025	CDF100751	28903	65087	NGO100414	40964	77148	VCH100753
16842	53026	CDF100752	28904	65088	NGO100416	40965	77149	VCH100755
16843	53027	CDF100753	28905	65089	NGO100417	40966	77150	VCH100756
16844	53028	CDF100756	28906	65090	NGO100418	40967	77151	VCH100759
16845	53029	CDF100757	28907	65091	NGO100419	40968	77152	VCH100763
16846	53030	CDF100763	28908	65092	NGO100420	40969	77153	VCH100766
16847	53031	CDF100770	28909	65093	NGO100434	40970	77154	VCH100771
16848	53032	CDF100771	28910	65094	NGO100436	40971	77155	VCH100784
16849	53033	CDF100773	28911	65095	NGO100439	40972	77156	VCH100785
16850	53034	CDF100774	28912	65096	NGO100447	40973	77157	VCH100789
16851	53035	CDF100779	28913	65097	NGO100452	40974	77158	VCH100804
16852	53036	CDF100783	28914	65098	NGO100458	40975	77159	VCH100823
16853	53037	CDF100786	28915	65099	NGO100472	40976	77160	VCH100828
16854	53038	CDF100787	28916	65100	NGO100474	40977	77161	VCH100832
16855	53039	CDF100789	28917	65101	NGO100484	40978	77162	VCH100837
16856	53040	CDF100790	28918	65102	NGO100485	40979	77163	VCH100839
16857	53041	CDF100791	28919	65103	NGO100488	40980	77164	VCH100842
16858	53042	CDF100795	28920	65104	NGO100490	40981	77165	VCH100850
16859	53043	CDF100797	28921	65105	NGO100494	40982	77166	VCH100853
16860	53044	CDF100798	28922	65106	NGO100495	40983	77167	VCH100859
16861	53045	CDF100803	28923	65107	NGO100498	40984	77168	VCH100860
16862	53046	CDF100814	28924	65108	NGO100507	40985	77169	VCH100862
16863	53047	CDF100817	28925	65109	NGO100513	40986	77170	VCH100864
16864	53048	CDF100819	28926	65110	NGO100523	40987	77171	VCH100873
16865	53049	CDF100831	28927	65111	NGO100524	40988	77172	VCH100874
16866	53050	CDF100846	28928	65112	NGO100527	40989	77173	VCH100877
16867	53051	CDF100848	28929	65113	NGO100535	40990	77174	VCH100889
16868	53052	CDF100857	28930	65114	NGO100540	40991	77175	VCH100890
16869	53053	CDF100863	28931	65115	NGO100553	40992	77176	VCH100893
16870	53054	CDF100864	28932	65116	NGO100556	40993	77177	VCH100897
16871	53055	CDF100866	28933	65117	NGO100564	40994	77178	VCH100898
16872	53056	CDF100867	28934	65118	NGO100569	40995	77179	VCH100900
16873	53057	CDF100868	28935	65119	NGO100573	40996	77180	VCH100901
16874	53058	CDF100869	28936	65120	NGO100577	40997	77181	VCH100907
16875	53059	CDF100871	28937	65121	NGO100578	40998	77182	VCH100908
16876	53060	CDF100873	28938	65122	NGO100580	40999	77183	VCH100911
16877	53061	CDF100874	28939	65123	NGO100582	41000	77184	VCH100912
16878	53062	CDF100875	28940	65124	NGO100584	41001	77185	VCH100921
16879	53063	CDF100877	28941	65125	NGO100586	41002	77186	VCH100927
16880	53064	CDF100879	28942	65126	NGO100588	41003	77187	VCH100935

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16881	53065	CDF100883	28943	65127	NGO100590	41004	77188	VCH100940
16882	53066	CDF100890	28944	65128	NGO100594	41005	77189	VCH100942
16883	53067	CDF100891	28945	65129	NGO100595	41006	77190	VCH100943
16884	53068	CDF100893	28946	65130	NGO100597	41007	77191	VCH100947
16885	53069	CDF100894	28947	65131	NGO100599	41008	77192	VCH100949
16886	53070	CDF100895	28948	65132	NGO100600	41009	77193	VCH100950
16887	53071	CDF100896	28949	65133	NGO100602	41010	77194	VCH100952
16888	53072	CDF100898	28950	65134	NGO100606	41011	77195	VCH100954
16889	53073	CDF100900	28951	65135	NGO100607	41012	77196	VCH100955
16890	53074	CDF100905	28952	65136	NGO100614	41013	77197	VCH100957
16891	53075	CDF100910	28953	65137	NGO100616	41014	77198	VCH100958
16892	53076	CDF100913	28954	65138	NGO100619	41015	77199	VCH100968
16893	53077	CDF100916	28955	65139	NGO100621	41016	77200	VCH100969
16894	53078	CDF100919	28956	65140	NGO100628	41017	77201	VCH100974
16895	53079	CDF100921	28957	65141	NGO100639	41018	77202	VCH100976
16896	53080	CDF100928	28958	65142	NGO100646	41019	77203	VCH100977
16897	53081	CDF100938	28959	65143	NGO100650	41020	77204	VCH100978
16898	53082	CDF100946	28960	65144	NGO100655	41021	77205	VCH100980
16899	53083	CDF100955	28961	65145	NGO100658	41022	77206	VCH100983
16900	53084	CDF100956	28962	65146	NGO100659	41023	77207	VCH101004
16901	53085	CDF100963	28963	65147	NGO100663	41024	77208	VCH101005
16902	53086	CDF100968	28964	65148	NGO100681	41025	77209	VCH101006
16903	53087	CDF100973	28965	65149	NGO100682	41026	77210	VCH101017
16904	53088	CDF100985	28966	65150	NGO100692	41027	77211	VCH101020
16905	53089	CDF100988	28967	65151	NGO100693	41028	77212	VCH101022
16906	53090	CDF100992	28968	65152	NGO100695	41029	77213	VCH101027
16907	53091	CDF101006	28969	65153	NGO100696	41030	77214	VCH101028
16908	53092	CDF101011	28970	65154	NGO100702	41031	77215	VCH101029
16909	53093	CDF101015	28971	65155	NGO100709	41032	77216	VCH101035
16910	53094	CDF101016	28972	65156	NGO100713	41033	77217	VCH101036
16911	53095	CDF101018	28973	65157	NGO100715	41034	77218	VCH101037
16912	53096	CDF101022	28974	65158	NGO100722	41035	77219	VCH101040
16913	53097	CDF101023	28975	65159	NGO100725	41036	77220	VCH101045
16914	53098	CDF101024	28976	65160	NGO100727	41037	77221	VCH101049
16915	53099	CDF101026	28977	65161	NGO100728	41038	77222	VCH101075
16916	53100	CDF101027	28978	65162	NGO100729	41039	77223	VCH101076
16917	53101	CDF101032	28979	65163	NGO100730	41040	77224	VCH101077
16918	53102	CDF101033	28980	65164	NGO100736	41041	77225	VCH101078
16919	53103	CDF101036	28981	65165	NGO100748	41042	77226	VCH101080
16920	53104	CDF101037	28982	65166	NGO100750	41043	77227	VCH101086
16921	53105	CDF101044	28983	65167	NGO100759	41044	77228	VCH101089
16922	53106	CDF101046	28984	65168	NGO100762	41045	77229	VCH101091
16923	53107	CDF101049	28985	65169	NGO100775	41046	77230	VCH101092
16924	53108	CDF101052	28986	65170	NGO100777	41047	77231	VCH101093
16925	53109	CDF101053	28987	65171	NGO100779	41048	77232	VCH101107
16926	53110	CDF101056	28988	65172	NGO100780	41049	77233	VCH101109
16927	53111	CDF101085	28989	65173	NGO100782	41050	77234	VCH101110
16928	53112	CDF101093	28990	65174	NGO100783	41051	77235	VCH101112
16929	53113	CDF101103	28991	65175	NGO100784	41052	77236	VCH101113
16930	53114	CDF101106	28992	65176	NGO100785	41053	77237	VCH101132
16931	53115	CDF101107	28993	65177	NGO100788	41054	77238	VCH101147
16932	53116	CDF101111	28994	65178	NGO100793	41055	77239	VCH101148
16933	53117	CDF101113	28995	65179	NGO100795	41056	77240	VCH101151
16934	53118	CDF101126	28996	65180	NGO100798	41057	77241	VCH101152
16935	53119	CDF101129	28997	65181	NGO100799	41058	77242	VCH101153

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16936	53120	CDF101135	28998	65182	NGO100804	41059	77243	VCH101158
16937	53121	CDF101141	28999	65183	NGO100807	41060	77244	VCH101160
16938	53122	CDF101143	29000	65184	NGO100813	41061	77245	VCH101183
16939	53123	CDF101148	29001	65185	NGO100815	41062	77246	VCH101184
16940	53124	CDF101154	29002	65186	NGO100817	41063	77247	VCH101187
16941	53125	CDF101156	29003	65187	NGO100826	41064	77248	VCH101196
16942	53126	CDF101157	29004	65188	NGO100829	41065	77249	VCH101200
16943	53127	CDF101158	29005	65189	NGO100830	41066	77250	VCH101201
16944	53128	CDF101162	29006	65190	NGO100831	41067	77251	VCH101215
16945	53129	CDF101163	29007	65191	NGO100839	41068	77252	VCH101223
16946	53130	CDF101166	29008	65192	NGO100851	41069	77253	VCH101225
16947	53131	CDF101172	29009	65193	NGO100852	41070	77254	VCH101236
16948	53132	CDF101174	29010	65194	NGO100854	41071	77255	VCH101237
16949	53133	CDF101175	29011	65195	NGO100861	41072	77256	VCH101239
16950	53134	CDF101185	29012	65196	NGO100865	41073	77257	VCH101240
16951	53135	CDF101197	29013	65197	NGO100871	41074	77258	VCH101263
16952	53136	CDF101198	29014	65198	NGO100874	41075	77259	VCH101264
16953	53137	CDF101203	29015	65199	NGO100883	41076	77260	VCH101268
16954	53138	CDF101204	29016	65200	NGO100885	41077	77261	VCH101278
16955	53139	CDF101213	29017	65201	NGO100887	41078	77262	VCH101280
16956	53140	CDF101218	29018	65202	NGO100888	41079	77263	VCH101281
16957	53141	CDF101225	29019	65203	NGO100889	41080	77264	VCH101283
16958	53142	CDF101226	29020	65204	NGO100890	41081	77265	VCH101284
16959	53143	CDF101229	29021	65205	NGO100891	41082	77266	VCH101285
16960	53144	CDF101233	29022	65206	NGO100893	41083	77267	VCH101291
16961	53145	CDF101242	29023	65207	NGO100894	41084	77268	VCH101301
16962	53146	CDF101251	29024	65208	NGO100896	41085	77269	VCH101307
16963	53147	CDF101258	29025	65209	NGO100898	41086	77270	VCH101315
16964	53148	CDF101260	29026	65210	NGO100899	41087	77271	VCH101317
16965	53149	CDF101262	29027	65211	NGO100904	41088	77272	VCH101321
16966	53150	CDF101264	29028	65212	NGO100907	41089	77273	VCH101329
16967	53151	CDF101265	29029	65213	NGO100911	41090	77274	VCH101334
16968	53152	CDF101269	29030	65214	NGO100912	41091	77275	VCH101344
16969	53153	CDF101274	29031	65215	NGO100917	41092	77276	VCH101352
16970	53154	CDF101278	29032	65216	NGO100919	41093	77277	VCH101366
16971	53155	CDF101289	29033	65217	NGO100920	41094	77278	VCH101382
16972	53156	CDF101294	29034	65218	NGO100921	41095	77279	VCH101389
16973	53157	CDF101300	29035	65219	NGO100923	41096	77280	VCH101393
16974	53158	CDF101305	29036	65220	NGO100925	41097	77281	VCH101395
16975	53159	CDF101307	29037	65221	NGO100927	41098	77282	VCH101403
16976	53160	CDF101308	29038	65222	NGO100929	41099	77283	VCH101404
16977	53161	CDF101312	29039	65223	NGO100931	41100	77284	VCH101414
16978	53162	CDF101314	29040	65224	NGO100932	41101	77285	VCH101421
16979	53163	CDF101327	29041	65225	NGO100934	41102	77286	VCH101430
16980	53164	CDF101333	29042	65226	NGO100936	41103	77287	VCH101463
16981	53165	CDF101334	29043	65227	NGO100938	41104	77288	VCH101469
16982	53166	CDF101347	29044	65228	NGO100939	41105	77289	VCH101471
16983	53167	CDF101353	29045	65229	NGO100947	41106	77290	VCH101476
16984	53168	CDF101362	29046	65230	NGO100954	41107	77291	VCH101496
16985	53169	CDF101374	29047	65231	NGO100957	41108	77292	VCH101497
16986	53170	CDF101386	29048	65232	NGO100959	41109	77293	VCH101503
16987	53171	CDF101392	29049	65233	NGO100962	41110	77294	VCH101525
16988	53172	CDF101397	29050	65234	NGO100967	41111	77295	VCH101530
16989	53173	CDF101399	29051	65235	NGO100971	41112	77296	VCH101533
16990	53174	CDF101403	29052	65236	NGO100973	41113	77297	VCH101534

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
16991	53175	CDF101412	29053	65237	NGO100979	41114	77298	VCH101536
16992	53176	CDF101426	29054	65238	NGO100980	41115	77299	VCH101551
16993	53177	CDF101429	29055	65239	NGO100982	41116	77300	VCH101555
16994	53178	CDF101436	29056	65240	NGO100984	41117	77301	VCH101557
16995	53179	CDF101443	29057	65241	NGO100986	41118	77302	VCH101558
16996	53180	CDF101444	29058	65242	NGO100989	41119	77303	VCH101561
16997	53181	CDF101445	29059	65243	NGO100995	41120	77304	VCH101565
16998	53182	CDF101451	29060	65244	NGO100999	41121	77305	VCH101566
16999	53183	CDF101453	29061	65245	NGO101001	41122	77306	VCH101567
17000	53184	CDF101466	29062	65246	NGO101003	41123	77307	VCH101573
17001	53185	CDF101471	29063	65247	NGO101005	41124	77308	VCH101574
17002	53186	CDF101472	29064	65248	NGO101007	41125	77309	VCH101585
17003	53187	CDF101475	29065	65249	NGO101009	41126	77310	VCH101588
17004	53188	CDF101478	29066	65250	NGO101013	41127	77311	VCH101594
17005	53189	CDF101479	29067	65251	NGO101025	41128	77312	VCH101607
17006	53190	CDF101484	29068	65252	NGO101027	41129	77313	VCH101608
17007	53191	CDF101487	29069	65253	NGO101035	41130	77314	VCH101612
17008	53192	CDF101488	29070	65254	NGO101039	41131	77315	VCH101613
17009	53193	CDF101490	29071	65255	NGO101047	41132	77316	VCH101614
17010	53194	CDF101501	29072	65256	NGO101050	41133	77317	VCH101626
17011	53195	CDF101504	29073	65257	NGO101054	41134	77318	VCH101631
17012	53196	CDF101510	29074	65258	NGO101056	41135	77319	VCH101656
17013	53197	CDF101512	29075	65259	NGO101059	41136	77320	VCH101659
17014	53198	CDF101537	29076	65260	NGO101060	41137	77321	VCH101669
17015	53199	CDF101542	29077	65261	NGO101061	41138	77322	VCH101672
17016	53200	CDF101563	29078	65262	NGO101062	41139	77323	VCH101673
17017	53201	CDF101569	29079	65263	NGO101068	41140	77324	VCH101683
17018	53202	CDF101574	29080	65264	NGO101070	41141	77325	VCH101693
17019	53203	CDF101575	29081	65265	NGO101071	41142	77326	VCH101702
17020	53204	CDF101594	29082	65266	NGO101078	41143	77327	VCH101709
17021	53205	CDF101597	29083	65267	NGO101084	41144	77328	VCH101713
17022	53206	CDF101598	29084	65268	NGO101085	41145	77329	VCH101717
17023	53207	CDF101604	29085	65269	NGO101086	41146	77330	VCH101723
17024	53208	CDF101608	29086	65270	NGO101087	41147	77331	VCH101736
17025	53209	CDF101611	29087	65271	NGO101096	41148	77332	VCH101740
17026	53210	CDF101613	29088	65272	NGO101099	41149	77333	VCH101757
17027	53211	CDF101615	29089	65273	NGO101101	41150	77334	VCH101777
17028	53212	CDF101617	29090	65274	NGO101103	41151	77335	VCH101789
17029	53213	CDF101623	29091	65275	NGO101104	41152	77336	VCH101790
17030	53214	CDF101626	29092	65276	NGO101107	41153	77337	VCH101791
17031	53215	CDF101629	29093	65277	NGO101111	41154	77338	VCH101792
17032	53216	CDF101630	29094	65278	NGO101113	41155	77339	VCH101796
17033	53217	CDF101638	29095	65279	NGO101119	41156	77340	VCH101797
17034	53218	CDF101639	29096	65280	NGO101120	41157	77341	VCH101804
17035	53219	CDF101648	29097	65281	NGO101123	41158	77342	VCH101807
17036	53220	CDF101661	29098	65282	NGO101128	41159	77343	VCH101814
17037	53221	CDF101665	29099	65283	NGO101136	41160	77344	VCH101818
17038	53222	CDF101686	29100	65284	NGO101160	41161	77345	VCH101822
17039	53223	CDF101697	29101	65285	NGO101163	41162	77346	VCH101827
17040	53224	CDF101698	29102	65286	NGO101165	41163	77347	VCH101828
17041	53225	CDF101700	29103	65287	NGO101171	41164	77348	VCH101832
17042	53226	CDF101701	29104	65288	NGO101177	41165	77349	VCH101833
17043	53227	CDF101708	29105	65289	NGO101181	41166	77350	VCH101843
17044	53228	CDF101725	29106	65290	NGO101188	41167	77351	VCH101844
17045	53229	CDF101730	29107	65291	NGO101191	41168	77352	VCH101848

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17046	53230	CDF101733	29108	65292	NGO101204	41169	77353	VCH101854
17047	53231	CDF101736	29109	65293	NGO101205	41170	77354	VCH101856
17048	53232	CDF101739	29110	65294	NGO101209	41171	77355	VCH101873
17049	53233	CDF101756	29111	65295	NGO101210	41172	77356	VCH101880
17050	53234	CDF101757	29112	65296	NGO101211	41173	77357	VCH101885
17051	53235	CDF101758	29113	65297	NGO101214	41174	77358	VCH101886
17052	53236	CDF101760	29114	65298	NGO101218	41175	77359	VCH101890
17053	53237	CDF101762	29115	65299	NGO101220	41176	77360	VCH101891
17054	53238	CDF101764	29116	65300	NGO101240	41177	77361	VCH101899
17055	53239	CDF101767	29117	65301	NGO101247	41178	77362	VCH101926
17056	53240	CDF101769	29118	65302	NGO101248	41179	77363	VCH101927
17057	53241	CDF101771	29119	65303	NGO101257	41180	77364	VCH101936
17058	53242	CDF101772	29120	65304	NGO101258	41181	77365	VCH101962
17059	53243	CDF101773	29121	65305	NGO101261	41182	77366	VCH101970
17060	53244	CDF101805	29122	65306	NGO101264	41183	77367	VCH101978
17061	53245	CDF101807	29123	65307	NGO101266	41184	77368	VCH101984
17062	53246	CDF101808	29124	65308	NGO101271	41185	77369	VCH101985
17063	53247	CDF101827	29125	65309	NGO101273	41186	77370	VCH101986
17064	53248	CDF101830	29126	65310	NGO101275	41187	77371	VCH101988
17065	53249	CDF101842	29127	65311	NGO101276	41188	77372	VCH101989
17066	53250	CDF101858	29128	65312	NGO101277	41189	77373	VCH101990
17067	53251	CDF101870	29129	65313	NGO101280	41190	77374	VCH101991
17068	53252	CDF101879	29130	65314	NGO101284	41191	77375	VCH101992
17069	53253	CDF101880	29131	65315	NGO101285	41192	77376	VCH101993
17070	53254	CDF101890	29132	65316	NGO101290	41193	77377	VCH101997
17071	53255	CDF101891	29133	65317	NGO101291	41194	77378	VCH102003
17072	53256	CDF101894	29134	65318	NGO101296	41195	77379	VCH102013
17073	53257	CDF101910	29135	65319	NGO101297	41196	77380	VCH102018
17074	53258	CDF101911	29136	65320	NGO101301	41197	77381	VCH102024
17075	53259	CDF101928	29137	65321	NGO101306	41198	77382	VCH102029
17076	53260	CDF101932	29138	65322	NGO101307	41199	77383	VCH102032
17077	53261	CDF101971	29139	65323	NGO101308	41200	77384	VCH102033
17078	53262	CDF101975	29140	65324	NGO101309	41201	77385	VCH102042
17079	53263	CDF101977	29141	65325	NGO101314	41202	77386	VCH102046
17080	53264	CDF102022	29142	65326	NGO101318	41203	77387	VCH102052
17081	53265	CDF102023	29143	65327	NGO101321	41204	77388	VCH102055
17082	53266	CDF102031	29144	65328	NGO101323	41205	77389	VCH102057
17083	53267	CDF102033	29145	65329	NGO101326	41206	77390	VCH102060
17084	53268	CDF102071	29146	65330	NGO101334	41207	77391	VCH102065
17085	53269	CDF102075	29147	65331	NGO101341	41208	77392	VCH102075
17086	53270	CDF102080	29148	65332	NGO101342	41209	77393	VCH102076
17087	53271	CDF102082	29149	65333	NGO101344	41210	77394	VCH102083
17088	53272	CDF102097	29150	65334	NGO101348	41211	77395	VCH102087
17089	53273	CDF102100	29151	65335	NGO101351	41212	77396	VCH102099
17090	53274	CDF102102	29152	65336	NGO101356	41213	77397	VCH102112
17091	53275	CDF102110	29153	65337	NGO101357	41214	77398	VCH102141
17092	53276	CDF102112	29154	65338	NGO101359	41215	77399	VCH102142
17093	53277	CDF102115	29155	65339	NGO101375	41216	77400	VCH102144
17094	53278	CDF102122	29156	65340	NGO101376	41217	77401	VCH102145
17095	53279	CDF102133	29157	65341	NGO101381	41218	77402	VCH102146
17096	53280	CDF102134	29158	65342	NGO101384	41219	77403	VCH102147
17097	53281	CDF102156	29159	65343	NGO101385	41220	77404	VCH102150
17098	53282	CDF102160	29160	65344	NGO101386	41221	77405	VCH102152
17099	53283	CDF102163	29161	65345	NGO101390	41222	77406	VCH102165
17100	53284	CDF102168	29162	65346	NGO101393	41223	77407	VCH102180

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17101	53285	CDF102169	29163	65347	NGO101394	41224	77408	VCH102181
17102	53286	CDF102172	29164	65348	NGO101399	41225	77409	VCH102186
17103	53287	CDF102182	29165	65349	NGO101400	41226	77410	VCH102191
17104	53288	CDF102190	29166	65350	NGO101406	41227	77411	VCH102208
17105	53289	CDF102194	29167	65351	NGO101407	41228	77412	VCH102210
17106	53290	CDF102197	29168	65352	NGO101420	41229	77413	VCH102211
17107	53291	CDF102198	29169	65353	NGO101427	41230	77414	VCH102212
17108	53292	CDF102200	29170	65354	NGO101432	41231	77415	VCH102213
17109	53293	CDF102218	29171	65355	NGO101440	41232	77416	VCH102215
17110	53294	CDF102230	29172	65356	NGO101445	41233	77417	VCH102216
17111	53295	CDF102241	29173	65357	NGO101449	41234	77418	VCH102221
17112	53296	CDF102256	29174	65358	NGO101461	41235	77419	VCH102222
17113	53297	CDF102264	29175	65359	NGO101470	41236	77420	VCH102223
17114	53298	CDF102268	29176	65360	NGO101471	41237	77421	VCH102224
17115	53299	CDF102271	29177	65361	NGO101474	41238	77422	VCH102225
17116	53300	CDF102273	29178	65362	NGO101477	41239	77423	VCH102226
17117	53301	CDF102281	29179	65363	NGO101479	41240	77424	VCH102228
17118	53302	CDF102290	29180	65364	NGO101492	41241	77425	VCH102232
17119	53303	CDF102294	29181	65365	NGO101494	41242	77426	VCH102233
17120	53304	CDF102295	29182	65366	NGO101498	41243	77427	VCH102234
17121	53305	CDF102299	29183	65367	NGO101515	41244	77428	VCH102235
17122	53306	CDF102303	29184	65368	NGO101519	41245	77429	VCH102236
17123	53307	CDF102305	29185	65369	NGO101522	41246	77430	VCH102237
17124	53308	CDF102312	29186	65370	NGO101532	41247	77431	VCH102239
17125	53309	CDF102314	29187	65371	NGO101542	41248	77432	VCH102285
17126	53310	CDF102323	29188	65372	NGO101561	41249	77433	VCH102289
17127	53311	CDF102335	29189	65373	NGO101563	41250	77434	VCH102308
17128	53312	CDF102339	29190	65374	NGO101564	41251	77435	VCH102315
17129	53313	CDF102341	29191	65375	NGO101565	41252	77436	VCH102325
17130	53314	CDF102345	29192	65376	NGO101574	41253	77437	VCH102327
17131	53315	CDF102346	29193	65377	NGO101576	41254	77438	VCH102328
17132	53316	CDF102350	29194	65378	NGO101578	41255	77439	VCH102329
17133	53317	CDF102353	29195	65379	NGO101582	41256	77440	VCH102338
17134	53318	CDF102363	29196	65380	NGO101585	41257	77441	VCH102339
17135	53319	CDF102374	29197	65381	NGO101587	41258	77442	VCH102341
17136	53320	CDF102385	29198	65382	NGO101594	41259	77443	VCH102342
17137	53321	CDF102396	29199	65383	NGO101595	41260	77444	VCH102344
17138	53322	CDF102404	29200	65384	NGO101601	41261	77445	VCH102346
17139	53323	CDF102412	29201	65385	NGO101603	41262	77446	VCH102350
17140	53324	CDF102419	29202	65386	NGO101613	41263	77447	VCH102354
17141	53325	CDF102422	29203	65387	NGO101615	41264	77448	VCH102355
17142	53326	CDF102434	29204	65388	NGO101616	41265	77449	VCH102356
17143	53327	CDF102436	29205	65389	NGO101617	41266	77450	VCH102359
17144	53328	CDF102440	29206	65390	NGO101619	41267	77451	VCH102361
17145	53329	CDF102441	29207	65391	NGO101620	41268	77452	VCH102362
17146	53330	CDF102444	29208	65392	NGO101623	41269	77453	VCH102363
17147	53331	CDF102447	29209	65393	NGO101626	41270	77454	VCH102364
17148	53332	CDF102465	29210	65394	NGO101627	41271	77455	VCH102365
17149	53333	CDF102470	29211	65395	NGO101628	41272	77456	VCH102366
17150	53334	CDF102471	29212	65396	NGO101630	41273	77457	VCH102367
17151	53335	CDF102483	29213	65397	NGO101631	41274	77458	VCH102368
17152	53336	CDF102505	29214	65398	NGO101632	41275	77459	VCH102369
17153	53337	CDF102522	29215	65399	NGO101633	41276	77460	VCH102370
17154	53338	CDF102528	29216	65400	NGO101635	41277	77461	VCH102371
17155	53339	CDF102535	29217	65401	NGO101637	41278	77462	VCH102372

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17156	53340	CDF102548	29218	65402	NGO101638	41279	77463	VCH102374
17157	53341	CDF102552	29219	65403	NGO101640	41280	77464	VCH102377
17158	53342	CDF102556	29220	65404	NGO101641	41281	77465	VCH102378
17159	53343	CDF102560	29221	65405	NGO101642	41282	77466	VCH102380
17160	53344	CDF102581	29222	65406	NGO101643	41283	77467	VCH102382
17161	53345	CDF102584	29223	65407	NGO101656	41284	77468	VCH102383
17162	53346	CDF102594	29224	65408	NGO101658	41285	77469	VCH102384
17163	53347	CDF102596	29225	65409	NGO101663	41286	77470	VCH102393
17164	53348	CDF102599	29226	65410	NGO101665	41287	77471	VCH102398
17165	53349	CDF102611	29227	65411	NGO101667	41288	77472	VCH102399
17166	53350	CDF102622	29228	65412	NGO101670	41289	77473	VCH102404
17167	53351	CDF102626	29229	65413	NGO101672	41290	77474	VCH102406
17168	53352	CDF102635	29230	65414	NGO101673	41291	77475	VCH102409
17169	53353	CDF102641	29231	65415	NGO101678	41292	77476	VCH102410
17170	53354	CDF102644	29232	65416	NGO101679	41293	77477	VCH102411
17171	53355	CDF102669	29233	65417	NGO101686	41294	77478	VCH102412
17172	53356	CDF102682	29234	65418	NGO101687	41295	77479	VCH102414
17173	53357	CDF102694	29235	65419	NGO101699	41296	77480	VCH102415
17174	53358	CDF102700	29236	65420	NGO101700	41297	77481	VCH102421
17175	53359	CDF102708	29237	65421	NGO101704	41298	77482	VCH102424
17176	53360	CDF102709	29238	65422	NGO101705	41299	77483	VCH102426
17177	53361	CDF102713	29239	65423	NGO101717	41300	77484	VCH102435
17178	53362	CDF102720	29240	65424	NGO101723	41301	77485	VCH102436
17179	53363	CDF102721	29241	65425	NGO101724	41302	77486	VCH102438
17180	53364	CDF102723	29242	65426	NGO101731	41303	77487	VCH102443
17181	53365	CDF102732	29243	65427	NGO101737	41304	77488	VCH102446
17182	53366	CDF102735	29244	65428	NGO101739	41305	77489	VCH102447
17183	53367	CDF102736	29245	65429	NGO101743	41306	77490	VCH102452
17184	53368	CDF102742	29246	65430	NGO101754	41307	77491	VCH102456
17185	53369	CDF102758	29247	65431	NGO101758	41308	77492	VCH102465
17186	53370	CDF102762	29248	65432	NGO101759	41309	77493	VCH102466
17187	53371	CDF102772	29249	65433	NGO101761	41310	77494	VCH102467
17188	53372	CDF102776	29250	65434	NGO101762	41311	77495	VCH102472
17189	53373	CDF102791	29251	65435	NGO101768	41312	77496	VCH102478
17190	53374	CDF102795	29252	65436	NGO101770	41313	77497	VCH102491
17191	53375	CDF102800	29253	65437	NGO101772	41314	77498	VCH102495
17192	53376	CDF102803	29254	65438	NGO101773	41315	77499	VCH102497
17193	53377	CDF102812	29255	65439	NGO101776	41316	77500	VCH102499
17194	53378	CDF102815	29256	65440	NGO101791	41317	77501	VCH102502
17195	53379	CDF102818	29257	65441	NGO101799	41318	77502	VCH102510
17196	53380	CDF102819	29258	65442	NGO101807	41319	77503	VCH102521
17197	53381	CDF102828	29259	65443	NGO101815	41320	77504	VCH102524
17198	53382	CDF102839	29260	65444	NGO101819	41321	77505	VCH102527
17199	53383	CDF102844	29261	65445	NGO101829	41322	77506	VCH102532
17200	53384	CDF102870	29262	65446	NGO101832	41323	77507	VCH102533
17201	53385	CDF102872	29263	65447	NGO101834	41324	77508	VCH102534
17202	53386	CDF102875	29264	65448	NGO101835	41325	77509	VCH102535
17203	53387	CDF102888	29265	65449	NGO101840	41326	77510	VCH102536
17204	53388	CDF102901	29266	65450	NGO101844	41327	77511	VCH102537
17205	53389	CDF102912	29267	65451	NGO101847	41328	77512	VCH102538
17206	53390	CDF102915	29268	65452	NGO101849	41329	77513	VCH102539
17207	53391	CDF102916	29269	65453	NGO101850	41330	77514	VCH102540
17208	53392	CDF102919	29270	65454	NGO101851	41331	77515	VCH102541
17209	53393	CDF102920	29271	65455	NGO101853	41332	77516	VCH102542
17210	53394	CDF102926	29272	65456	NGO101854	41333	77517	VCH102543

WO 02/077183			PCT/US02/09107					
DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17211	53395	CDF102934	29273	65457	NGO101855	41334	77518	VCH102544
17212	53396	CDF102939	29274	65458	NGO101858	41335	77519	VCH102545
17213	53397	CDF102948	29275	65459	NGO101860	41336	77520	VCH102546
17214	53398	CDF102952	29276	65460	NGO101868	41337	77521	VCH102547
17215	53399	CDF102956	29277	65461	NGO101870	41338	77522	VCH102548
17216	53400	CDF102964	29278	65462	NGO101872	41339	77523	VCH102549
17217	53401	CDF102976	29279	65463	NGO101874	41340	77524	VCH102550
17218	53402	CDF102979	29280	65464	NGO101878	41341	77525	VCH102551
17219	53403	CDF102980	29281	65465	NGO101881	41342	77526	VCH102552
17220	53404	CDF102990	29282	65466	NGO101883	41343	77527	VCH102553
17221	53405	CDF102998	29283	65467	NGO101887	41344	77528	VCH102554
17222	53406	CDF103015	29284	65468	NGO101889	41345	77529	VCH102555
17223	53407	CDF103020	29285	65469	NGO101892	41346	77530	VCH102556
17224	53408	CDF103030	29286	65470	NGO101895	41347	77531	VCH102557
17225	53409	CDF103032	29287	65471	NGO101896	41348	77532	VCH102558
17226	53410	CDF103033	29288	65472	NGO101899	41349	77533	VCH102559
17227	53411	CDF103036	29289	65473	NGO101903	41350	77534	VCH102560
17228	53412	CDF103042	29290	65474	NGO101904	41351	77535	VCH102565
17229	53413	CDF103045	29291	65475	NGO101908	41352	77536	VCH102579
17230	53414	CDF103058	29292	65476	NGO101913	41353	77537	VCH102581
17231	53415	CDF103080	29293	65477	NGO101914	41354	77538	VCH102583
17232	53416	CDF103094	29294	65478	NGO101916	41355	77539	VCH102586
17233	53417	CDF103097	29295	65479	NGO101920	41356	77540	VCH102598
17234	53418	CDF103106	29296	65480	NGO101923	41357	77541	VCH102600
17235	53419	CDF103113	29297	65481	NGO101926	41358	77542	VCH102604
17236	53420	CDF103119	29298	65482	NGO101927	41359	77543	VCH102612
17237	53421	CDF103132	29299	65483	NGO101928	41360	77544	VCH102614
17238	53422	CDF103133	29300	65484	NGO101930	41361	77545	VCH102617
17239	53423	CDF103152	29301	65485	NGO101932	41362	77546	VCH102618
17240	53424	CDF103162	29302	65486	NGO101933	41363	77547	VCH102627
17241	53425	CDF103166	29303	65487	NGO101935	41364	77548	VCH102632
17242	53426	CDF103177	29304	65488	NGO101937	41365	77549	VCH102638
17243	53427	CDF103179	29305	65489	NGO101941	41366	77550	VCH102645
17244	53428	CDF103183	29306	65490	NGO101943	41367	77551	VCH102651
17245	53429	CDF103189	29307	65491	NGO101945	41368	77552	VCH102652
17246	53430	CDF103190	29308	65492	NGO101947	41369	77553	VCH102654
17247	53431	CDF103193	29309	65493	NGO101948	41370	77554	VCH102658
17248	53432	CDF103200	29310	65494	NGO101961	41371	77555	VCH102668
17249	53433	CDF103201	29311	65495	NGO101964	41372	77556	VCH102672
17250	53434	CDF103227	29312	65496	NGO101966	41373	77557	VCH102675
17251	53435	CDF103236	29313	65497	NGO101970	41374	77558	VCH102678
17252	53436	CDF103240	29314	65498	NGO101975	41375	77559	VCH102696
17253	53437	CDF103247	29315	65499	NGO101976	41376	77560	VCH102697
17254	53438	CDF103249	29316	65500	NGO101981	41377	77561	VCH102699
17255	53439	CDF103251	29317	65501	NGO101986	41378	77562	VCH102705
17256	53440	CDF103262	29318	65502	NGO101989	41379	77563	VCH102707
17257	53441	CDF103263	29319	65503	NGO101993	41380	77564	VCH102709
17258	53442	CDF103274	29320	65504	NGO102003	41381	77565	VCH102720
17259	53443	CDF103288	29321	65505	NGO102004	41382	77566	VCH102723
17260	53444	CDF103290	29322	65506	NGO102006	41383	77567	VCH102727
17261	53445	CDF103294	29323	65507	NGO102007	41384	77568	VCH102728
17262	53446	CDF103297	29324	65508	NGO102008	41385	77569	VCH102730
17263	53447	CDF103315	29325	65509	NGO102016	41386	77570	VCH102731
17264	53448	CDF103324	29326	65510	NGO102022	41387	77571	VCH102734
17265	53449	CDF103325	29327	65511	NGO102024	41388	77572	VCH102735

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17266	53450	CDF103326	29328	65512	NGO102027	41389	77573	VCH102736
17267	53451	CDF103337	29329	65513	NGO102033	41390	77574	VCH102742
17268	53452	CDF103342	29330	65514	NGO102035	41391	77575	VCH102754
17269	53453	CDF103346	29331	65515	NGO102044	41392	77576	VCH102759
17270	53454	CDF103349	29332	65516	NGO102045	41393	77577	VCH102794
17271	53455	CDF103355	29333	65517	NGO102048	41394	77578	VCH102800
17272	53456	CDF103357	29334	65518	NGO102060	41395	77579	VCH102807
17273	53457	CDF103367	29335	65519	NGO102122	41396	77580	VCH102813
17274	53458	CDF103369	29336	65520	NGO102340	41397	77581	VCH102815
17275	53459	CDF103374	29337	65521	NGO102402	41398	77582	VCH102833
17276	53460	CDF103376	29338	65522	NGO102451	41399	77583	VCH102834
17277	53461	CDF103392	29339	65523	NGO102470	41400	77584	VCH102835
17278	53462	CDF103395	29340	65524	NGO102478	41401	77585	VCH102859
17279	53463	CDF103398	29341	65525	NGO102494	41402	77586	VCH102863
17280	53464	CDF103406	29342	65526	NGO102501	41403	77587	VCH102865
17281	53465	CDF103409	29343	65527	NGO102546	41404	77588	VCH102866
17282	53466	CDF103411	29344	65528	NGO102594	41405	77589	VCH102882
17283	53467	CDF103424	29345	65529	NGO102668	41406	77590	VCH102892
17284	53468	CDF103450	29346	65530	NGO102690	41407	77591	VCH102911
17285	53469	CDF103451	29347	65531	NGO102691	41408	77592	VCH102915
17286	53470	CDF103454	29348	65532	NGO102695	41409	77593	VCH102929
17287	53471	CDF103463	29349	65533	NGO102702	41410	77594	VCH102941
17288	53472	CDF103467	29350	65534	NGO102756	41411	77595	VCH102948
17289	53473	CDF103476	29351	65535	NGO102937	41412	77596	VCH102962
17290	53474	CDF103505	29352	65536	NGO102970	41413	77597	VCH102965
17291	53475	CDF103506	29353	65537	NGO103053	41414	77598	VCH102977
17292	53476	CDF103514	29354	65538	NGO103107	41415	77599	VCH102978
17293	53477	CDF103521	29355	65539	NGO103118	41416	77600	VCH102979
17294	53478	CDF103530	29356	65540	NGO103134	41417	77601	VCH102980
17295	53479	CDF103531	29357	65541	NGO103266	41418	77602	VCH103001
17296	53480	CDF103540	29358	65542	NGO103389	41419	77603	VCH103010
17297	53481	CDF103547	29359	65543	NGO103576	41420	77604	VCH103013
17298	53482	CDF103551	29360	65544	NGO103600	41421	77605	VCH103018
17299	53483	CDF103552	29361	65545	NGO103623	41422	77606	VCH103019
17300	53484	CDF103555	29362	65546	NGO103626	41423	77607	VCH103020
17301	53485	CDF103560	29363	65547	NGO103629	41424	77608	VCH103030
17302	53486	CDF103562	29364	65548	NGO103687	41425	77609	VCH103198
17303	53487	CDF103563	29365	65549	NGO103743	41426	77610	VCH103209
17304	53488	CDF103566	29366	65550	NME100236	41427	77611	VCH103214
17305	53489	CDF103571	29367	65551	NME100252	41428	77612	VCH103237
17306	53490	CDF103575	29368	65552	NME100470	41429	77613	VCH103241
17307	53491	CDF103578	29369	65553	NME100473	41430	77614	VCH103245
17308	53492	CDF103581	29370	65554	NME100672	41431	77615	VCH103246
17309	53493	CDF103586	29371	65555	NME100865	41432	77616	VCH103249
17310	53494	CDF103594	29372	65556	NME100881	41433	77617	VCH103253
17311	53495	CDF103596	29373	65557	NME101006	41434	77618	VCH103254
17312	53496	CDF103625	29374	65558	NME101282	41435	77619	VCH103256
17313	53497	CDF103636	29375	65559	NME101639	41436	77620	VCH103263
17314	53498	CDF103637	29376	65560	NME101733	41437	77621	VCH103268
17315	53499	CDF103639	29377	65561	NME101919	41438	77622	VCH103270
17316	53500	CDF103650	29378	65562	NME102042	41439	77623	VCH103287
17317	53501	CDF103659	29379	65563	NME102130	41440	77624	VCH103296
17318	53502	CDF103661	29380	65564	NME102132	41441	77625	VCH103300
17319	53503	CDF103672	29381	65565	NME102279	41442	77626	VCH103302
17320	53504	CDF103674	29382	65566	NME102614	41443	77627	VCH103315

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17321	53505	CDF103678	29383	65567	NME102710	41444	77628	VCH103341
17322	53506	CDF103680	29384	65568	NME103001	41445	77629	VCH103344
17323	53507	CDF103684	29385	65569	NME103365	41446	77630	VCH103346
17324	53508	CDF103688	29386	65570	NME103369	41447	77631	VCH103347
17325	53509	CDF103692	29387	65571	NME104849	41448	77632	VCH103365
17326	53510	CDF103715	29388	65572	NME105091	41449	77633	VCH103392
17327	53511	CDF103720	29389	65573	NME200002	41450	77634	VCH103397
17328	53512	CDF103732	29390	65574	NME200004	41451	77635	VCH103400
17329	53513	CDF103744	29391	65575	NME200010	41452	77636	VCH103408
17330	53514	CDF103746	29392	65576	NME200014	41453	77637	VCH103412
17331	53515	CDF103752	29393	65577	NME200015	41454	77638	VCH103430
17332	53516	CDF103755	29394	65578	NME200026	41455	77639	VCH103431
17333	53517	CDF103760	29395	65579	NME200029	41456	77640	VCH103435
17334	53518	CDF103765	29396	65580	NME200041	41457	77641	VCH103439
17335	53519	CDF103770	29397	65581	NME200042	41458	77642	VCH103445
17336	53520	CDF103771	29398	65582	NME200047	41459	77643	VCH103447
17337	53521	CDF103776	29399	65583	NME200053	41460	77644	VCH103448
17338	53522	CDF103778	29400	65584	NME200054	41461	77645	VCH103465
17339	53523	CDF103782	29401	65585	NME200057	41462	77646	VCH103469
17340	53524	CDF103784	29402	65586	NME200061	41463	77647	VCH103478
17341	53525	CDF103795	29403	65587	NME200064	41464	77648	VCH103496
17342	53526	CDF103797	29404	65588	NME200069	41465	77649	VCH103500
17343	53527	CDF103801	29405	65589	NME200070	41466	77650	VCH103501
17344	53528	CDF103804	29406	65590	NME200071	41467	77651	VCH103502
17345	53529	CDF103805	29407	65591	NME200072	41468	77652	VCH103503
17346	53530	CDF103808	29408	65592	NME200075	41469	77653	VCH103521
17347	53531	CDF103810	29409	65593	NME200076	41470	77654	VCH103522
17348	53532	CDF103820	29410	65594	NME200077	41471	77655	VCH103524
17349	53533	CDF103821	29411	65595	NME200082	41472	77656	VCH103525
17350	53534	CDF103827	29412	65596	NME200083	41473	77657	VCH103533
17351	53535	CDF103831	29413	65597	NME200089	41474	77658	VCH103534
17352	53536	CDF103872	29414	65598	NME200096	41475	77659	VCH103540
17353	53537	CDF103877	29415	65599	NME200097	41476	77660	VCH103555
17354	53538	CDF103879	29416	65600	NME200098	41477	77661	VCH103556
17355	53539	CDF103887	29417	65601	NME200099	41478	77662	VCH103557
17356	53540	CDF103888	29418	65602	NME200100	41479	77663	VCH103569
17357	53541	CDF103902	29419	65603	NME200101	41480	77664	VCH103582
17358	53542	CDF103903	29420	65604	NME200102	41481	77665	VCH103587
17359	53543	CDF103906	29421	65605	NME200103	41482	77666	VCH103591
17360	53544	CDF103911	29422	65606	NME200104	41483	77667	VCH103592
17361	53545	CDF103913	29423	65607	NME200105	41484	77668	VCH103597
17362	53546	CDF103914	29424	65608	NME200106	41485	77669	VCH103605
17363	53547	CDF103915	29425	65609	NME200107	41486	77670	VCH103606
17364	53548	CDF103927	29426	65610	NME200108	41487	77671	VCH103615
17365	53549	CDF103929	29427	65611	NME200109	41488	77672	VCH103617
17366	53550	CDF103937	29428	65612	NME200110	41489	77673	VCH103624
17367	53551	CDF103938	29429	65613	NME200111	41490	77674	VCH103644
17368	53552	CDF103939	29430	65614	NME200112	41491	77675	VCH103663
17369	53553	CDF103947	29431	65615	NME200113	41492	77676	VCH103664
17370	53554	CDF103949	29432	65616	NME200114	41493	77677	VCH103690
17371	53555	CDF103952	29433	65617	NME200115	41494	77678	VCH103693
17372	53556	CDF103953	29434	65618	NME200116	41495	77679	VCH103702
17373	53557	CDF103962	29435	65619	NME200117	41496	77680	VCH103704
17374	53558	CDF103965	29436	65620	NME200118	41497	77681	VCH103717
17375	53559	CDF103974	29437	65621	NME200119	41498	77682	VCH103722

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17376	53560	CDF103976	29438	65622	NME200120	41499	77683	VCH103726
17377	53561	CDF103985	29439	65623	NME200121	41500	77684	VCH103730
17378	53562	CDF103991	29440	65624	NME200122	41501	77685	VCH103735
17379	53563	CDF103994	29441	65625	NME200123	41502	77686	VCH103743
17380	53564	CDF103997	29442	65626	NME200125	41503	77687	VCH103746
17381	53565	CDF103998	29443	65627	NME200127	41504	77688	VCH103754
17382	53566	CDF104004	29444	65628	NME200128	41505	77689	VCH103755
17383	53567	CDF104012	29445	65629	NME200129	41506	77690	VCH103757
17384	53568	CDF104017	29446	65630	NME200130	41507	77691	VCH103759
17385	53569	CDF104028	29447	65631	NME200131	41508	77692	VCH103762
17386	53570	CDF104041	29448	65632	NME200135	41509	77693	VCH103763
17387	53571	CDF104046	29449	65633	NME200136	41510	77694	VCH103764
17388	53572	CDF104047	29450	65634	NME200137	41511	77695	VCH103799
17389	53573	CDF104052	29451	65635	NME200138	41512	77696	VCH103807
17390	53574	CDF104057	29452	65636	NME200139	41513	77697	VCH103812
17391	53575	CDF104086	29453	65637	NME200140	41514	77698	VCH103825
17392	53576	CDF104095	29454	65638	NME200141	41515	77699	VCH103826
17393	53577	CDF104102	29455	65639	NME200142	41516	77700	YPS000004
17394	53578	CDF104113	29456	65640	NME200143	41517	77701	YPS000005
17395	53579	CDF104123	29457	65641	NME200144	41518	77702	YPS000008
17396	53580	CDF104126	29458	65642	NME200149	41519	77703	YPS000011
17397	53581	CDF104127	29459	65643	NME200153	41520	77704	YPS000017
17398	53582	CDF104133	29460	65644	NME200155	41521	77705	YPS000024
17399	53583	CDF104135	29461	65645	NME200158	41522	77706	YPS000029
17400	53584	CDF104139	29462	65646	NME200171	41523	77707	YPS000030
17401	53585	CDF104151	29463	65647	NME200172	41524	77708	YPS000041
17402	53586	CDF104152	29464	65648	NME200185	41525	77709	YPS000049
17403	53587	CDF104153	29465	65649	NME200186	41526	77710	YPS000050
17404	53588	CDF104166	29466	65650	NME200190	41527	77711	YPS000052
17405	53589	CDF104168	29467	65651	NME200203	41528	77712	YPS000053
17406	53590	CDF104179	29468	65652	NME200206	41529	77713	YPS000055
17407	53591	CDF104187	29469	65653	NME200207	41530	77714	YPS000060
17408	53592	CDF104196	29470	65654	NME200209	41531	77715	YPS000064
17409	53593	CDF104197	29471	65655	NME200210	41532	77716	YPS000069
17410	53594	CDF104202	29472	65656	NME200212	41533	77717	YPS000070
17411	53595	CDF104210	29473	65657	NME200216	41534	77718	YPS000071
17412	53596	CDF104218	29474	65658	NME200226	41535	77719	YPS000074
17413	53597	CDF104232	29475	65659	NME200227	41536	77720	YPS000084
17414	53598	CDF104256	29476	65660	NME200229	41537	77721	YPS000085
17415	53599	CDF104259	29477	65661	NME200230	41538	77722	YPS000089
17416	53600	CDF104265	29478	65662	NME200231	41539	77723	YPS000093
17417	53601	CDF104280	29479	65663	NME200232	41540	77724	YPS000097
17418	53602	CDF104286	29480	65664	NME200234	41541	77725	YPS000098
17419	53603	CDF104289	29481	65665	NME200241	41542	77726	YPS000099
17420	53604	CDF104297	29482	65666	NME200242	41543	77727	YPS000102
17421	53605	CDF104306	29483	65667	NME200243	41544	77728	YPS000110
17422	53606	CDF104307	29484	65668	NME200246	41545	77729	YPS000124
17423	53607	CDF104311	29485	65669	NME200247	41546	77730	YPS000126
17424	53608	CDF104317	29486	65670	NME200254	41547	77731	YPS000129
17425	53609	CDF104319	29487	65671	NME200259	41548	77732	YPS000130
17426	53610	CDF104322	29488	65672	NME200260	41549	77733	YPS000131
17427	53611	CDF104332	29489	65673	NME200263	41550	77734	YPS000132
17428	53612	CDF104333	29490	65674	NME200265	41551	77735	YPS000135
17429	53613	CDF104338	29491	65675	NME200267	41552	77736	YPS000139
17430	53614	CDF104341	29492	65676	NME200270	41553	77737	YPS000146

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17431	53615	CDF104345	29493	65677	NME200271	41554	77738	YPS000147
17432	53616	CDF104368	29494	65678	NME200274	41555	77739	YPS000152
17433	53617	CDF104371	29495	65679	NME200276	41556	77740	YPS000155
17434	53618	CDF104379	29496	65680	NME200304	41557	77741	YPS000157
17435	53619	CDF104394	29497	65681	NME200305	41558	77742	YPS000160
17436	53620	CDF104406	29498	65682	NME200306	41559	77743	YPS000161
17437	53621	CDF104417	29499	65683	NME200308	41560	77744	YPS000162
17438	53622	CDF104423	29500	65684	NME200310	41561	77745	YPS000163
17439	53623	CDF104427	29501	65685	NME200318	41562	77746	YPS000164
17440	53624	CDF104436	29502	65686	NME200322	41563	77747	YPS000166
17441	53625	CDF104440	29503	65687	NME200324	41564	77748	YPS000169
17442	53626	CDF104477	29504	65688	NME200328	41565	77749	YPS000170
17443	53627	CDF104480	29505	65689	NME200331	41566	77750	YPS000171
17444	53628	CDF104494	29506	65690	NME200335	41567	77751	YPS000173
17445	53629	CDF104515	29507	65691	NME200337	41568	77752	YPS000177
17446	53630	CDF104542	29508	65692	NME200343	41569	77753	YPS000179
17447	53631	CDF104545	29509	65693	NME200347	41570	77754	YPS000180
17448	53632	CDF104551	29510	65694	NME200349	41571	77755	YPS000185
17449	53633	CDF104552	29511	65695	NME200352	41572	77756	YPS000188
17450	53634	CDF104553	29512	65696	NME200353	41573	77757	YPS000189
17451	53635	CDF104554	29513	65697	NME200364	41574	77758	YPS000193
17452	53636	CDF104561	29514	65698	NME200365	41575	77759	YPS000197
17453	53637	CDF104563	29515	65699	NME200366	41576	77760	YPS000205
17454	53638	CDF104582	29516	65700	NME200373	41577	77761	YPS000208
17455	53639	CDF104583	29517	65701	NME200375	41578	77762	YPS000210
17456	53640	CDP100001	29518	65702	NME200377	41579	77763	YPS000211
17457	53641	CDP100002	29519	65703	NME200389	41580	77764	YPS000215
17458	53642	CDP100003	29520	65704	NME200399	41581	77765	YPS000219
17459	53643	CDP100007	29521	65705	NME200412	41582	77766	YPS000221
17460	53644	CDP100008	29522	65706	NME200413	41583	77767	YPS000228
17461	53645	CDP100014	29523	65707	NME200415	41584	77768	YPS000233
17462	53646	CDP100016	29524	65708	NME200417	41585	77769	YPS000235
17463	53647	CDP100018	29525	65709	NME200420	41586	77770	YPS000240
17464	53648	CDP100020	29526	65710	NME200423	41587	77771	YPS000242
17465	53649	CDP100022	29527	65711	NME200426	41588	77772	YPS000246
17466	53650	CDP100024	29528	65712	NME200427	41589	77773	YPS000256
17467	53651	CDP100027	29529	65713	NME200429	41590	77774	YPS000263
17468	53652	CDP100028	29530	65714	NME200430	41591	77775	YPS000265
17469	53653	CDP100030	29531	65715	NME200440	41592	77776	YPS000266
17470	53654	CDP100031	29532	65716	NME200446	41593	77777	YPS000268
17471	53655	CDP100042	29533	65717	NME200455	41594	77778	YPS000270
17472	53656	CDP100045	29534	65718	NME200457	41595	77779	YPS000286
17473	53657	CDP100046	29535	65719	NME200459	41596	77780	YPS000319
17474	53658	CDP100047	29536	65720	NME200461	41597	77781	YPS000320
17475	53659	CDP100048	29537	65721	NME200463	41598	77782	YPS000331
17476	53660	CDP100049	29538	65722	NME200466	41599	77783	YPS000333
17477	53661	CDP100053	29539	65723	NME200467	41600	77784	YPS000334
17478	53662	CDP100056	29540	65724	NME200470	41601	77785	YPS000335
17479	53663	CDP100057	29541	65725	NME200471	41602	77786	YPS000338
17480	53664	CDP100062	29542	65726	NME200477	41603	77787	YPS000339
17481	53665	CDP100064	29543	65727	NME200478	41604	77788	YPS000343
17482	53666	CDP100068	29544	65728	NME200479	41605	77789	YPS000345
17483	53667	CDP100071	29545	65729	NME200480	41606	77790	YPS000346
17484	53668	CDP100074	29546	65730	NME200481	41607	77791	YPS000348
17485	53669	CDP100078	29547	65731	NME200485	41608	77792	YPS000350

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17486	53670	CDP100079	29548	65732	NME200487	41609	77793	YPS000357
17487	53671	CDP100080	29549	65733	NME200491	41610	77794	YPS000359
17488	53672	CDP100081	29550	65734	NME200494	41611	77795	YPS000365
17489	53673	CDP100085	29551	65735	NME200495	41612	77796	YPS000377
17490	53674	CDP100086	29552	65736	NME200496	41613	77797	YPS000392
17491	53675	CDP100087	29553	65737	NME200497	41614	77798	YPS000393
17492	53676	CDP100088	29554	65738	NME200499	41615	77799	YPS000400
17493	53677	CDP100089	29555	65739	NME200506	41616	77800	YPS000402
17494	53678	CDP100090	29556	65740	NME200508	41617	77801	YPS000405
17495	53679	CDP100092	29557	65741	NME200510	41618	77802	YPS000409
17496	53680	CDP100097	29558	65742	NME200511	41619	77803	YPS000424
17497	53681	CDP100102	29559	65743	NME200512	41620	77804	YPS000434
17498	53682	CDP100105	29560	65744	NME200513	41621	77805	YPS000441
17499	53683	CDP100108	29561	65745	NME200518	41622	77806	YPS000444
17500	53684	CDP100111	29562	65746	NME200532	41623	77807	YPS000446
17501	53685	CDP100114	29563	65747	NME200544	41624	77808	YPS000449
17502	53686	CDP100115	29564	65748	NME200545	41625	77809	YPS000460
17503	53687	CDP100121	29565	65749	NME200546	41626	77810	YPS000463
17504	53688	CDP100127	29566	65750	NME200552	41627	77811	YPS000466
17505	53689	CDP100129	29567	65751	NME200553	41628	77812	YPS000478
17506	53690	CDP100131	29568	65752	NME200555	41629	77813	YPS000483
17507	53691	CDP100135	29569	65753	NME200558	41630	77814	YPS000489
17508	53692	CDP100137	29570	65754	NME200564	41631	77815	YPS000491
17509	53693	CDP100142	29571	65755	NME200574	41632	77816	YPS000494
17510	53694	CDP100143	29572	65756	NME200576	41633	77817	YPS000496
17511	53695	CDP100145	29573	65757	NME200577	41634	77818	YPS000498
17512	53696	CDP100146	29574	65758	NME200578	41635	77819	YPS000499
17513	53697	CDP100148	29575	65759	NME200581	41636	77820	YPS000502
17514	53698	CDP100150	29576	65760	NME200585	41637	77821	YPS000504
17515	53699	CDP100163	29577	65761	NME200589	41638	77822	YPS000510
17516	53700	CDP100164	29578	65762	NME200590	41639	77823	YPS000522
17517	53701	CDP100166	29579	65763	NME200591	41640	77824	YPS000524
17518	53702	CDP100167	29580	65764	NME200593	41641	77825	YPS000538
17519	53703	CDP100169	29581	65765	NME200596	41642	77826	YPS000541
17520	53704	CDP100170	29582	65766	NME200606	41643	77827	YPS000561
17521	53705	CDP100172	29583	65767	NME200608	41644	77828	YPS000566
17522	53706	CDP100176	29584	65768	NME200611	41645	77829	YPS000578
17523	53707	CDP100180	29585	65769	NME200613	41646	77830	YPS000580
17524	53708	CDP100182	29586	65770	NME200616	41647	77831	YPS000583
17525	53709	CDP100186	29587	65771	NME200622	41648	77832	YPS000584
17526	53710	CDP100193	29588	65772	NME200634	41649	77833	YPS000586
17527	53711	CDP100194	29589	65773	NME200638	41650	77834	YPS000590
17528	53712	CDP100196	29590	65774	NME200649	41651	77835	YPS000599
17529	53713	CDP100199	29591	65775	NME200652	41652	77836	YPS000606
17530	53714	CDP100202	29592	65776	NME200654	41653	77837	YPS000610
17531	53715	CDP100203	29593	65777	NME200657	41654	77838	YPS000612
17532	53716	CDP100213	29594	65778	NME200659	41655	77839	YPS000618
17533	53717	CDP100215	29595	65779	NME200661	41656	77840	YPS000626
17534	53718	CDP100223	29596	65780	NME200667	41657	77841	YPS000639
17535	53719	CDP100224	29597	65781	NME200668	41658	77842	YPS000675
17536	53720	CDP100230	29598	65782	NME200672	41659	77843	YPS000678
17537	53721	CDP100231	29599	65783	NME200676	41660	77844	YPS000682
17538	53722	CDP100242	29600	65784	NME200678	41661	77845	YPS000694
17539	53723	CDP100250	29601	65785	NME200684	41662	77846	YPS000696
17540	53724	CDP100257	29602	65786	NME200699	41663	77847	YPS000703

WO 02/077183

PCT/US02/09107

DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID	DNA SeqID	Protein SeqID	Gene LocusID
17541	53725	CDP100258	29603	65787	NME200701	41664	77848	YPS000704
17542	53726	CDP100260	29604	65788	NME200703	41665	77849	YPS000708
17543	53727	CDP100261	29605	65789	NME200704	41666	77850	YPS000723
17544	53728	CDP100262	29606	65790	NME200707	41667	77851	YPS000724
17545	53729	CDP100263	29607	65791	NME200717	41668	77852	YPS000729
17546	53730	CDP100265	29608	65792	NME200732	41669	77853	YPS000732
17547	53731	CDP100269	29609	65793	NME200733	41670	77854	YPS000756
17548	53732	CDP100271	29610	65794	NME200734	41671	77855	YPS000760
17549	53733	CDP100277	29611	65795	NME200735	41672	77856	YPS000765
17550	53734	CDP100278	29612	65796	NME200748	41673	77857	YPS000769
17551	53735	CDP100279	29613	65797	NME200754	41674	77858	YPS000770
17552	53736	CDP100280	29614	65798	NME200757	41675	77859	YPS000771
17553	53737	CDP100282	29615	65799	NME200762	41676	77860	YPS000773
17554	53738	CDP100284	29616	65800	NME200764	41677	77861	YPS000774
17555	53739	CDP100290	29617	65801	NME200769	41678	77862	YPS000776
17556	53740	CDP100293	29618	65802	NME200772	41679	77863	YPS000779
17557	53741	CDP100296	29619	65803	NME200777	41680	77864	YPS000781
17558	53742	CDP100305	29620	65804	NME200783	41681	77865	YPS000784
17559	53743	CDP100306	29621	65805	NME200784	41682	77866	YPS000787
17560	53744	CDP100308	29622	65806	NME200785	41683	77867	YPS000790
17561	53745	CDP100309	29623	65807	NME200795	41684	77868	YPS000792
17562	53746	CDP100313	29624	65808	NME200800	41685	77869	YPS000797
17563	53747	CDP100317	29625	65809	NME200804	41686	77870	YPS000805
17564	53748	CDP100325	29626	65810	NME200815	41687	77871	YPS000806
17565	53749	CDP100338	29627	65811	NME200819	41688	77872	YPS000809
17566	53750	CDP100339	29628	65812	NME200820	41689	77873	YPS000810
17567	53751	CDP100341	29629	65813	NME200821	41690	77874	YPS000815
17568	53752	CDP100348	29630	65814	NME200824	41691	77875	YPS000834
17569	53753	CDP100349	29631	65815	NME200834	41692	77876	YPS000836
17570	53754	CDP100352	29632	65816	NME200836	41693	77877	YPS000842
17571	53755	CDP100360	29633	65817	NME200837	41694	77878	YPS000843
17572	53756	CDP100362	29634	65818	NME200847	41695	77879	YPS000845
17573	53757	CDP100363	29635	65819	NME200849	41696	77880	YPS000846
17574	53758	CDP100365	29636	65820	NME200853	41697	77881	YPS000851
17575	53759	CDP100371	29637	65821	NME200854	41698	77882	YPS000855
17576	53760	CDP100373	29638	65822	NME200855	41699	77883	YPS000857
17577	53761	CDP100375	29639	65823	NME200856	41700	77884	YPS000861
17578	53762	CDP100378	29640	65824	NME200857	41701	77885	YPS000863
17579	53763	CDP100379	29641	65825	NME200858	41702	77886	YPS000864
17580	53764	CDP100382	29642	65826	NME200861	41703	77887	YPS000868
17581	53765	CDP100383	29643	65827	NME200866	41704	77888	YPS000870
17582	53766	CDP100385	29644	65828	NME200870	41705	77889	YPS000871
17583	53767	CDP100387	29645	65829	NME200871	41706	77890	YPS000872
17584	53768	CDP100388	29646	65830	NME200872	41707	77891	YPS000874
17585	53769	CDP100396	29647	65831	NME200873	41708	77892	YPS000890
17586	53770	CDP100399	29648	65832	NME200879	41709	77893	YPS000894
17587	53771	CDP100400	29649	65833	NME200881	41710	77894	YPS000900
17588	53772	CDP100404	29650	65834	NME200882	41711	77895	YPS000901
17589	53773	CDP100408	29651	65835	NME200887	41712	77896	YPS000907
17590	53774	CDP100409	29652	65836	NME200892	41713	77897	YPS000909
17591	53775	CDP100410	29653	65837	NME200893	41714	77898	YPS000920
17592	53776	CDP100414	29654	65838	NME200897	41715	77899	YPS000925
17593	53777	CDP100417	29655	65839	NME200899	41716	77900	YPS000930
17594	53778	CDP100418	29656	65840	NME200901	41717	77901	YPS000931
17595	53779	CDP100421	29657	65841	NME200903	41718	77902	YPS000933